THE

THIRTEENTH ANNUAL REPORT

FROM

THE GOVERNORS

OF THE

MADRAS UNIVERSITY,

FOR

1853—54.

MADRAS
PRINTED BY D. P. L. C. CONNOR, AT THE CHRISTIAN KNOWLEDGE SOCIETY'S PRESS, CHURCH STREET, VEPERY.
1854.

MADRAS UNIVERSITY

Governors.

J. OUCHTERLONY, ESQ.

C. CUNNIAH CHETTY,

T. PYCROFT, ESQ.

ASUPH JUNG BAHADAR ETIMAD-OOD DOWLA.

MAJOR G. BALFOUR,

LIEUT. COL. F. A. REID, C. B.

CAPTAIN J. WILSON,

F. RENCONTRE, ESQ.

P. CARSTAIRS, ESQ.

Secretary.

A. J. ARBUTHNOT, ESQ.

EDUCATIONAL ESTABLISHMENT.

Principal, and Professor of Mathematics and Natural Philosophy	E. B POWELL, ESQ., B A Cantab.
† *Professor of History, Political Economy, and Moral Science*	A. A. GORDON, ESQ , M A Edin.
‡ *Professor of English Literature and English Composition*	H BOWERS, ESQ.

First Tutor of the High School.....	MR. G G. WHITE,
Second.....	,, M DUTT,
Third	,, T B. PEPPIN,
Fourth.....	,, J NAILER,
Fifth	C TERCOVENGADUM NAIDOO,
Sixth	A NARRAIN ROW
Seventh.....	MR A. DIQUE,

Head Master of the Primary School	MR. J. McLEISH,
First Tutor.....	,, C. D'SENA,
Second do.	,, L DIQUE,
Third do.	,, F. D'VAZ,

Writing Master.....	,, T F JOHNSON

Head Tamil Moonshee.....	T VIZAGAPERMAUL IYER,
Tamil Moonshee	STREENEVASSA CHARRY,
Do	P VEJIARUNGA MOODELY,

Head Teloogoo Moonshee.....	P CHINNIAH SOOREE,
Teloogoo Moonshee	C P HYAGREEVA SHASTRY.
Do	T VENKIAH

Mahratta Moonshee	GUNGADER SHASTRY

* Charged with the General Superintendence of the whole Institution

† In Charge of the Normal Class.

‡ On leave to Europe

§ Acting Assistant Mathematical Teacher in the College Department

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12th April, 1854.

To

The Right Honorable the

GOVERNOR IN COUNCIL,

Fort Saint George.

RIGHT HONORABLE SIR,

1. We have the honor to lay before you the thirteenth Annual Report on the state and progress of the Madras University with an account of our proceedings generally during the past year.

2. Our last Report contained a detailed narrative of the measures proposed by us for the improvement of the Presidency Institution, and for the extension of education in the Provinces upon the increased grant of one lac of Rupees per annum, to which we had been authorized to extend our expenditure. During the past year we have been engaged in carrying out those measures so far as the materials available to us have admitted, and though but little has been as yet accomplished in comparison to what remains to be done, a beginning has been made, which, we trust, will ere long result in the establishment of a sound system of education throughout the Presidency.

Madras University, Number of Scholars under Instruction.

3. The number of scholars under instruction in the Presidency Institution, which at the commencement of the

past year had been considerably increased, in consequence of the establishment of the Primary School and the reduction of the School fee in the High School, has now reached 529, of whom 278 are in the Primary School, 221 in the High School and 30, including 7 Normal Pupils, in the Collegiate Department of the University.

Increase of numbers in the High School less than had been anticipated, but still satisfactory and likely to be progressive.

4. We had anticipated that the reduction of the School fee would have induced a greater resort of scholars to the higher departments, especially to the High School.* We observe, however, on reference to the educational reports issued in the other Presidencies, that a similar state of things still exists in the principal Institutions both at Calcutta and Bombay, and that an equally large proportion of the Scholars attending there are to be found in the lower classes, receiving instruction of the most elementary character. But at the same time the increase which has taken place in the High School department has been by no means unsatisfactory, and has, we think, been sufficient to justify our opinion that the rate of fee formerly charged had tended to limit the advantages of the Institution. Exclusive of the fourth, the upper third and the preparatory classes, the two former of which have now been transferred to the Collegiate Department and the latter to the Primary School, the number in the High School as it was formerly constituted rarely or never exceeded 150; whereas it now contains 221 Scholars. At the late examination 80 boys were promoted from the Primary school into the High School and as it is probable that the High School will in future be

* To meet this increase of numbers it has been found necessary to provide additional accommodation and a temporary building has accordingly been erected on the premises at present rented, containing four good sized rooms. It is hoped that the erection of a permanent building adapted to the requirements of the Institution, the estimates for which are now under preparation by the Superintending Engineer, will ere long remove the inconveniences still experienced from the crowded state of the main building

principally recruited from the Primary, the increase in numbers in the former will, we trust, be progressive.

Collegiate Department

5. The number of Scholars who have remained to prosecute their studies in the Collegiate Department is extremely small, and when it is considered that the services of the Principal and two Professors are to a great extent given up to the instruction of these youths, it may appear that the interests of the very large majority who fill the other Departments of the University are sacrificed to those of the few who are found fit to profit by the more extended course of study, the Collegiate Department is intended to afford. We are aware that such an apprehension was felt when the establishment of this Department was originally proposed, but we believe it to be unfounded, and much as it is to be regretted that the advantages of these classes should as yet have been restricted to so few, we see every reason to think that no other arrangement would have served equally well to carry out the objects of the Institution. The ground urged by us in a former communication that in the higher branches of education, it is absolutely essential to the efficiency of the Teacher that his attention should be confined to a set of kindred subjects, appears to us to be quite conclusive as to the propriety of the arrangement, and as the numbers in the upper classes of the High School gradually increase, a proportionate increase in the classes of the Collegiate Department will doubtless follow.

6. It must be borne in mind that though apparently engaged in the exclusive instruction of the Collegiate classes, a considerable portion of the Principal's time is taken up in the superintendence and general management of the Institution, and that of the 2d Professor, Mr. Gordon, in the instruction of the Normal Class. For the present year moreover this Department has lost the services of the 3d Professor, Mr. Bowers, who has been compelled to quit India from ill-health, and it may here be mentioned that in consequence of Mr. Bowers' absence the Principal has arranged

to undertake himself the performance of Mr. Bowers' duties assigning the chief portion of the Mathematical instruction of these classes to C. Teroovengadum Naidoo, a Proficient of the University, who has been employed for the last year as a Teacher in the High School and is an excellent Mathematical Scholar.

Selection of 4 Scholars for employment under the Madras Railway Company.

7. It is proper to state with reference to the present numbers in these classes that four Scholars left them in October last for employment under the Madras Railway Company, another for a stipendiary studentship in the Medical College, and a sixth to become the master of a private School. The appointment of the four scholars as apprentices under the Railway Company, which was made on the result of an examination open to all Candidates, while it affords satisfactory evidence of the great practical utility of the studies pursued in the University, is well calculated to prove to the natives that by availing themselves for their children of the education offered them by Government, they are fitting them for pushing themselves on in life by other and not less advantageous means than that of Government employment to which the views of the educated Natives have been hitherto almost exclusively confined.

Results of the Annual Examination of the Collegiate Department.

8. The result of the examination in December last, was on the whole satisfactory. The answering of the Scholars in the Collegiate Department was remarkably good and we are gratified in being able to confer Proficients' Degrees with honors of the 1st Class upon two Scholars of the senior Class, T. Mootoosawmy and V. Rajahgopaul. The reports of the Examiners bear ample testimony to Mootoosawmy's proficiency in almost every subject studied by him. Rajahgopaul's attainments are also highly creditable. We have also conferred Proficients' Degrees of the 2d Class upon P. Chinnatumbee and P. Vurda Charry.

9. The Principal states that in no former year have the senior students gone through so complete a course as that accomplished by the four above-mentioned, and that in point of intellect Mootoosawmy ranks with the two or three best of the Proficients of past years. The favorable opinion expressed by him of the progress made by the Scholars of this Class is fully borne out by the reports of the public examiners who took a part in the examination of the University, and by the report on the public examination for Government rewards which has since taken place, and the result of which has been most creditable to the Principal and Professors of the University.

10. We have awarded the Elphinstone Prize to T. Mootoosawmy for the best English Essay on the following subject.

"The order of Providence is such that national vices invariably bring about their own punishment." The Patcheappah's Vernacular Prize for the best Tamil Exposition of a portion of Robertson's History of America, has been awarded to V. Rajahgopaul.

11. The following Scholars have been elected to vacant Scholarships:—

Collegiate Department.	*High School.*
C. Ramiah,	C. Coopoosawmy,
Y. Vencataramiah,	Y. Allagasingum,
B. Gopauliah,	V. Vencatasawmy,
V. Soobramanian,	V. Dorasawmy,
T. Coopoosawmy,	T. Jeyaram,
L. Vurdarajooloo,	M. Colundavaloo,
T. Samiah,	H. Vencata Row,
V. Canakiah.	P. Balajee Row,
	R. Vencatakistna Row,
	C. Watkins,
	B Ramasawmy,
	V. Watkins,
	C. Vencatasawmy,
	C. Runga Charry,

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T. Samiah,
V. Canakiah.

High School

C. Coopoosawmy,
Y. Allagasingum,
V Vencatasawmy,
V. Dorasawmy,
T. Jeyaram,
M. Colundavaloo,
H. Vencata Row,
P Balajee Row,
R. Vencatakistna Row,
C. Watkins,
B Ramasawmy,
V. Watkins,
C. Vencatasawmy,
C. Runga Charry,

and to the following Scholars prizes have been awarded for having attained the first place in their respective classes:—

Collegiate Department.

B. Gopauliah,
C. Ramiah.

High School.

V. Soobramanian,
C. Coopoosawmy,
R. Vencatakistna Row,
P. Soobaroyen,
W. White,
P. Rajahruthnum,
E. Aroonachellum.

Primary.

S Teeroovengada Charry,
P. Chengleroyen,
A. Shunmoogum,
T. Neelamaga Charry,
C. Ruthnavaloo,
M. C. Veeraraguvulu,
C. Puttaberamen,
T. Rungiah,
C. Narasimhooloo,
B. Ambrose, *extra prize.*

Vernacular Department.

High School, Tamil.

V. Rungasawmy,
M Parthasarady,
C Mootoosawmy,
E. King.

High School, Telugu.

Y. Allagasingary,
G. Seetaramiah,
M. Vasadaven,
F. D'Silva.

Primary.

Ruthnavaloo,
Nallathumbee,
C. Comarudavoo.

Primary, Telugu.

T. Rungiah,
Puttaberamen;
Oopacaranathen.

High School, Mahratta.

H. Vencata Row,
C. Balajee Row,
P. Thond Row,
P. Basheam.

Primary

D Balajee Row,
P Peramkoosen Row.
P. Seeva Row.

Foundation of Norton Medal.

12. In connection with the subject of prizes, we have much gratification in reporting the foundation of a Gold Medal by certain passed Proficients of the Institution in honor of the late President, Mr. George Norton, which is to be designated the Norton Medal, and is to be awarded annually to the author of the

best Essay in Tamil or Telugu. The Proficients state that their object in adopting this mode of displaying their feelings towards Mr. George Norton is to assist in improving the tone of native thought, and in creating a Vernacular Literature, embodying enlightened European views, and they are therefore desirous that the subject for the Essay should be of a character in consonance with this end, and that no Essayist should have a medal assigned to him merely on account of his surpassing his competitors, but that the absolute merit of the composition should be regarded in the award. We have readily sanctioned the establishment of the proposed medal and in accordance with the request of the Proficients, we beg to recommend that permission may be granted to have the medal struck annually at the Government Mint free of charge; a privilege which we understand has been conceded to the Medical College in the case of the Johnstone Medal.

Examination of some of the classes of the High School not so satisfactory

13. The result of the examination in some of the classes of the High School was not so satisfactory as might have been expected, and showed that the teaching had been defective. The great difficulty with which we have now to contend at the Presidency, as well as in the Mofussil, is that of procuring efficient Junior Teachers, the great increase of numbers having necessitated a commensurate addition to the tutorial staff. The best Junior Teachers we have been able to procure are two of the Proficients of the University; and one of these, C. Teroovengadum, whose name has been already mentioned in this report, has proved a valuable acquisition to the Institution. The other, A. Narrain Row, is also a competent teacher. The majority of the Proficients however have hitherto looked for employment to other departments of the service, where their prospects of advancement have been greater and where they have enjoyed the advantage, only recently granted to the Educational Department, of being entitled to the benefits of the Pension Rules. The extension

Difficulty of obtaining good Junior Teachers.

of these rules to the educational servants of Government is one of the most important steps towards the advancement of Native education that has yet been taken, and will doubtless induce many to enter the Department, whose services under other circumstances it would have been difficult to secure.

14. Some time however must still elapse before any number of well qualified Native teachers will be available and for several years to come they will find ample openings for employment in the several Provincial Schools, which, we trust, will ere long be in operation. Under these circumstances we have deemed it expedient to take measures for obtaining the services of two well qualified persons educated at one of the Training Institutions in England in connexion with the Committee of the Privy Council on Education, with the view of placing the instruction of the lower classes of the High School upon a more efficient footing.

Progress of the Primary School satisfactory.

15. The progress of the Primary School is satisfactory and reflects credit on the Head Master, Mr. McLeish.

Normal Class.

16. Last year we reported the establishment of a Normal Class for training teachers, the instruction of which had been entrusted to the 2d Professor, Mr. Gordon. Of the pupils who entered the class at the commencement of last year, one has been appointed to a teachership in the Provincial school at Rajahmundry, and three to junior teacherships in the Primary school, two having been removed as not possessing any aptitude for teaching. The usefulness of the class has been much impaired by the very low attainments of most of those who have entered it, and we regret to observe that none of the more advanced scholars of the Institution have thought fit to take advantage of it. We deem it right to state that the pupils who have been selected from the class for appointment as Teachers have not by any means reached the standard which should be required from our pupil teachers,

nor should we have sanctioned their appointment if better qualified persons could have been found. We hope next year to be able to report more favorably of the progress of this class. The formation of the proposed Vernacular Normal class is still in abeyance for want of a competent Vernacular Superintendent.

Establishment of Provincial Schools at Cuddalore and Rajahmundry.

17. We have now to advert to one of the most important subjects that has engaged our attention during the year; the establishment of Government Schools in the Mofussil, the two first of which have been founded at Cuddalore and Rajahmundry.

Reasons for selecting the former place as the station of the first Provincial School.

18. The first of these places was selected as a fitting locality for the first of the Provincial Schools, in consequence of the desire manifested by the native community to obtain the means of educating their children, as proved by the fact of their having supported at their own expense two English Schools, which though of an inferior description afforded good materials for the commencement of a well organized Institution. The prospect of receiving the cordial support of the local authorities was also an additional reason for our selection.

Reasons for establishing the second Provincial School at Rajahmundry.

19. We had in the first instance selected Vizagapatam as the most central situation for those parts of the Northern Circars which we believed to be the most deficient in educational resources, (for we were aware of the existence of an excellent school at Masulipatam which must provide in some degree for the wants of the more Southern Provinces) and although it was within our knowledge that a Missionary School was in existence at the former station under the charge of the Rev. Mr. Hay, we did not conceive that such adequate means of instruction had been provided as would supersede the necessity of establishing a Government School.

20. On communicating however to Mr. Walter Elliot, the Commissioner in the Northern Circars, our intention to found a Government School at Vizagapatam, our attention was drawn by him to the excellent course of instruction imparted in Mr. Hay's School, which we found was fully equal to that proposed for the Government Provincial School. Mr. Elliot at the same time represented so forcibly the paramount importance of the Rajahmundry district as a field for educational operations, that we deemed it expedient to suspend the arrangements we had commenced for the establishment of a School at Vizagapatam, and proceeded at once to found a School at Rajahmundry, which was opened on the 16th January last.

21. Having thus stated the reasons which weighed with us in our selection of the localities for the establishment of the two first Provincial Schools, we will now proceed to offer such information as we have received in regard to the progress of these schools. The Cuddalore School was founded on the 1st July last under the Head Mastership of Mr. John Armour, formerly Head Master of St. Andrew's Parochial School at Madras, a Gentleman holding very excellent testimonials and well fitted, by the experience he had formerly had in Madras, to become a very efficient instructor of native youths; the following Gentlemen having previously been appointed to form a Committee for the supervision and inspection of the School.

Progress of the Cuddalore School.

Mr. Edward Maltby, Collector of South Arcot—*President.*
Mr. George Harris, Acting Judge of Cuddalore.
Mr. Gordon Forbes, Additional Sub-Collector—*Secretary.*
Mr W. Burrell, Depot Surgeon.
M. Juggarow, Principal Sudr Ameen.
Rungasawmy Pillay, Sheristadar of the Session Court.
Sudaseva Pillay, Translator in the Collector's Office.

Difficulties caused by the hostilities of the principal Natives to the admission of low caste boys.

22. Shortly after the establishment of the School some difficulties were raised by a portion of the Native community to the admission of low caste boys, which resulted in the removal of several of the Scholars, and which having been reported to us by the Local Committee we deemed it our duty to inform them that such a distinction as was sought to be established was altogether repugnant to the principles upon which the Government system of education is based, and the object of which is to afford to all classes of the community the advantage of a sound education without reference to creed, colour or caste. We at the same time expressed our hope that the Committee, and especially the native members of it, would use every effort to extirpate a prejudice which could not be conceded to by an enlightened Government, and if acted on by the Natives must prove most prejudicial to the success of the school.

23. A petition was subsequently forwarded to us bearing the signatures of a considerable number of the principal natives of Cuddalore, in which they requested that if the admission of Pariahs was to be continued, a separate room might be provided for their instruction apart from the other Scholars. To comply with this request would clearly have involved the recognition of what we considered to be an improper distinction and would materially have interfered with the discipline and efficiency of the School. We therefore deemed it proper to repeat our resolution to sanction no such distinctions, and at the same time informed the Petitioners that the views entertained by us on this subject, on the occasion of a similar discussion arising in the Madras University, had been submitted to Government, and had met with their entire concurrence. The Committee now report that since that decision was made known and understood to be final the reluctance at first manifested " seems to be gra- " dually giving way and in course of time it will probably

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"cease to have any appreciable influence on the members "of the School."

Course of instruction laid down.

24. The course of instruction embraces the following subjects :—

English Reading, Writing, Arithmetic, Geography, English and Indian History, English Composition, Euclid, Algebra, the Mensuration of Areas, and Reading and Writing in the Tamil language with translations from Tamil into English and vice versâ, and the monthly fee laid down for payment by the Scholars is eight annas each.

Result of the Examination of the Cuddalore School.

25. An examination was held on the 30th December last in the presence of the majority of the Committee and a few of the Native and East Indian community, the result of which is stated by the Committee to have been very satisfactory and highly creditable to Mr. Armour and his assistants. The following extracts from the report of the Committee on the progress of the School (a copy of which will be found in the Appendices) are inserted in this place as referring to a subject of much general interest.

New subjects proposed by the Local Committee to be added to the course.

"In considering further the extent to which the studies of the upper class should be advanced in Trigonometry, Algebra, the English Classics and the higher branches of English Composition, the Committee are impressed with the prior importance of giving a practical bent to the education to be imparted, so that students on leaving the Government School may find themselves in possession of one or more practical acquirements which may qualify them at once for employment in one or other of the few professions which India can offer at the present time to her educated classes. Passing over employments in the Government Offices and Courts, for which a good general education is the best preparation, the Committee have in view the following employments for which they consider young

men may obtain a special training in the Government School under their direction."

"1st. As Overseers, Maistries and Writers in the Civil Engineer's Department."

"2d. Similar appointments in the service of the Railway Company."

"3d. Employment in Mercantile Houses and in the Superintendence of Machinery in Cotton, Sugar, Silk and Iron Factories."

"The Committee therefore propose that the time of the upper class should be partly occupied in acquiring a knowledge of surveying, road-making and building, and request that the Board will cause the School to be supplied with 12 copies of Lieut. Ford's work on these subjects. With a view to employment in Mercantile houses and manufactories it would be necessary to give instruction in the English method of book-keeping and in the terms and usages of commerce. A practical knowledge of Steam Machinery in aid and illustration of lectures on the subject may be gained at Sugar, Cotton and Iron Factories in and near Cuddalore."

"In proposing to devote a portion of the time of the first class and eventually perhaps of the second also to these studies, the Committee pre-suppose the foundation of a sound knowledge of English, Geometry, Arithmetic, History and Geography, and on the other hand give to the practical instruction, above described, a preference over an advance to the highest branches of Algebra, Trigonometry and English composition. These higher attainments would still be within the reach of those students whose future prospects are independent of any professional exertion or whose views for the future rendered these desirable, and the Madras University would afford to young men so circumstanced the necessary opportunities for completing their studies. Students expressing a

desire to prosecute Medical studies might also be transferred with that object to the Madras Medical College."

"The Committee are aware that these points have already engaged the attention of the Board and are sanguine of its approval and assistance in the course they propose to pursue. They press its early adoption, because at the present moment with the introduction of rail-roads and canals in immediate prospect, and a survey in progress on the spot, a wide field is opening for the employment of young men, possessing a knowledge of Civil Engineering, and the wants of the country, no less than their own interest, call for the formation of such a class of men."

"The Committee are gratified to find that Mr. Armour is both able and willing to undertake the instruction of the upper class in the subjects they propose to add to their course of study."

Concurrence of the University Board in introduction of the subjects proposed.

26. We have stated in reply our full concurrence in the utility of the studies which the Committee propose to introduce into the course of instruction followed in the higher classes, and have accordingly sanctioned the introduction of lessons in the art of road-making and building and in the use of steam engine and in book-keeping, in addition to the course of study already laid down in which the Mensuration of land was one of the subjects specified.

27. The number of Scholars in attendance is stated to have averaged during the last few months 126, and we trust that the disinclination which has been manifested by a portion of the Native population to avail themselves of the advantages of the School in consequence of our resolution to recognize no distinction of caste, will rapidly give way when the beneficial effects of a liberal education shall have been more fully brought home to them.

Satisfactory progress of the School.

28. On the whole we consider the progress of the School to have been

very satisfactory and to reflect great credit on the energy and ability of the Head Master Mr. Armour. We have already brought to the notice of Government the cordial co-operation we received from the President of the Managing Committee, Mr. E. Maltby, in carrying out our preliminary arrangements for the establishment of the School. The interest all along evinced by this Gentleman and his Colleagues in the advancement of the Institution has no doubt materially contributed to its success.

Progress of the Rajahmundry School retarded by the hostilities of the Natives to the admission of low caste boys.

29. We regret having to report less favorably on the progress of the School at Rajahmundry which has been retarded by the hostility of a portion of the Native community to the admission of low caste boys. The School was opened on the 16th January last. Mr. William Black, lately a teacher in the General Assembly's Institution at Madras, having been appointed to the Head Mastership, and the following Gentlemen having been constituted a Committee for its general management and supervision.

Mr. T. Prendergast—Collector and Magistrate of Rajahmundry, *President.*
Mr. Walter Elliot—Commissioner of the Northern Circars.
Mr. T. A. Anstruther—Civil and Session Judge of Rajahmundry.
Major F. C. Cotton—Civil Engineer of the Godavery Division.
Mr. J. L. Ranking—Zillah Surgeon of Rajahmundry,—*Secretary.*
C. Bauloo, Native Surgeon.
Copalatpatu Joghee Juggnuth Raz.
Kotte Puttabee Rama Row.

30. On the opening of the School 40 Scholars were admitted and the total of admissions up to the last report of the Committee amounted to 70, of whom 12 were Brahmins, 34 Soodras, 12 Mahomedans, 6 East Indians and 6 Pariahs. The question of the admission of Pariahs appears from the first to have engaged the attention of the Caste inhabitants, and much uneasy feeling is said to have prevailed on the

subject previous to the opening of the School. Many respectable persons, it is stated, abstained in consequence from sending their children and when the first Pariah boy was admitted, all the Brahmins and 31 other Scholars, most of whom were Soodras, left the School. At the date of the last report received from the Committee there were again however 40 Scholars in attendance, of whom 10 are Mahomedans, 6 East Indians, 18 Soodras and 6 Pariahs.

31. It is much to be regretted that the Native Community of Rajahmundry have thought fit to raise this impediment to a free and general resort to the School, but we trust that when the nature of the advantages which it is calculated to afford is more generally understood, and it is found by experience that the authorities are resolved to allow of no such distinction as that sought to be established, the prejudices of the Natives of Rajahmundry, as at Cuddalore, will gradually yield to a more enlightened appreciation of the interests of their children. Indeed the very circumstance of the rapid recovery of the numbers to their original standard on the School's opening affords abundant ground for looking to such a result with confidence.

Course of instruction laid down the same as at Cuddalore.

32. The course of instruction laid down is the same as that at Cuddalore, Telugu being substituted for Tamil. The School fee charged for each Scholar is also the same, viz.: eight annas per mensem.

Rate of School fee charged in the Provincial Schools.

33. It had been our intention to fix an uniform fee of one rupee in the several Provincial Schools, subject to a remission of one-half in favor of any additional members of the same family attending the School, but having learnt that this charge would probably have the effect of restricting the advantages of the Schools to a comparatively limited number of Scholars, we deemed it advisable to leave the arrangement to the discretion of the Local Committees with an ex-

pression of our opinion as to the maximum and minimum rates that should be adopted. The short interval that has elapsed since the establishment of the Rajahmundry School will sufficiently account for the absence of any report on the progress of the few Scholars who have as yet resorted to it.

Failure to obtain Head Masters has delayed the establishment of other Provincial Schools.

34. We had hoped to be able on this occasion to report the establishment of two other Provincial Schools, but the failure of our endeavours to procure competent Head Masters has caused an unavoidable delay. The stations to which we propose next to direct our operations, are Combaconum and Calicut. At the former station we are indebted to the liberality of His Highness the Rajah of Tanjore for a commodious building which has been placed at our disposal for educational purposes, and having been put into thorough repair, will be ready for the opening of the School as soon as competent Masters can be procured. We learn from Mr. Forbes, the Collector of Tanjore, who was good enough to undertake the execution of the repairs required to the School buildings, that there is every prospect of the School at Combaconum being numerously attended, and that at present for want of a good local School the higher classes of Government servants entertain at their own cost, as private tutors for their children, men who have been educated at the High School at Madras. The Collector of Malabar recommends the establishment of a School at Calicut, which on a former occasion when the formation of Government Provincial Schools was first mooted, was pronounced after some discussion to be the most eligible situation for the purpose on the Western Coast. We have taken measures to procure two Head Masters from England and hope to be in a position at an early date to report the opening of Schools at each of the above stations upon a plan similar to that of the Schools already in operation at Rajahmundry and Cuddalore.

Intention of the Board to establish Schools at Combaconum and Calicut.

Also at Bellary.

35. It is proposed to establish a fifth School at Bellary, where the Collector states that the leading Natives, including the Government Servants in the Cutcherry and Courts, seem well disposed to subscribe liberally for building a suitable School house, should the Government be pleased to aid them with funds for defraying subsequent expenses.

Claims of Chittoor to a Government Provincial School.

36. The late Acting Collector of North Arcot has strongly advocated the claims of that district to a Government Provincial School. "It is," he observes "more central than most. In point of population it stands third on the list. It contains more large towns than many of the other districts. The English Schools already existing can furnish pupils who are sufficiently advanced for entering upon the superior course of instruction which it is the object of the High School to impart. And finally, the climate of Chittoor is preferred by the Native community to the climate of the Presidency, or to such climates as those of Cuddapah, and Bellary." He adds that "if Chittoor has been passed over on the ground that the district is comparatively near to the Presidency, it may be answered that the inhabitants do not avail themselves of this apparent advantage in their favor, both because the climate of the coast is unfavorable, and because the expense of supporting children at Madras is higher than any class can generally afford." We are disposed to concur in the above opinion and when a fifth Provincial School shall have been opened at Bellary, we think that so soon as competent Masters can be procured, a sixth should be established at Chittoor.

37. Our great difficulty however for some time to come will be the want of competent Masters, and until this want shall have been adequately supplied, the progress of our operations in the Provinces must be comparatively slow.

Grant-in-aid system.

38. We have not yet been favored with any final orders on the proposition

to introduce the Grant in Aid system into this Presidency, which we understand was some time ago referred for the consideration of the Home Authorities. From the replies we have received to our circular letter applying for information as to the existing state of education in the several districts, we are confirmed in the opinion expressed in our last Report that the system of Grants-in-Aid of local efforts is the only means whereby an efficient system of national education can be effectually carried out. In almost every district of this Presidency there are schools already in existence, some established by Missionary Societies, others by the combined efforts of the European and Native Community, and others by the Natives themselves, which, if aided by Government Grants and subjected to periodical inspection, might very speedily be rendered most useful instruments of education. At Vizagapatam, Narsapoor, Masulipatam, Guntoor, Nellore, Chingleput, St. Thomas' Mount, Chittoor, Vellore, Salem, Coimbatore, Mangalore, Cannanore, Cochin, Trichinopoly, Tanjore, Madura and Tinnevelly there are such Schools in operation, the efficiency of which might be materially increased at a comparatively trifling cost. The application of the proposed system to the improvement of the common village Schools, by which means only can any palpable effect be produced on the great bulk of the population, will be a matter of greater difficulty and will require the aid of efficient Inspectors and the establishment of Training Institutions for teachers, on a scale commensurate with the importance of the object in view.

Result of Public Examination for Government Rewards

39. It only remains for us to notice the report of the Public Examiners on the public examination for Government Rewards held in February last, a copy of which is appended to this Report. This Examination was carried out on the plan adopted by the late Council of Education, certain fixed subjects being laid down in which a certain amount of proficiency was required to entitle any candidate to reward what-

Plan of the Examination

ever might be his superiority over his competitors. In addition to the prescribed subjects, which were all comparatively of an elementary character, a list of extra subjects was given, embracing the studies pursued at the various Schools at the Presidency, in any or all of which the Candidates were at liberty to be examined; the object being to secure a certain standard of proficiency in those branches of knowledge which were deemed essential to a sound education, and at the same time to afford to those Candidates who might have prosecuted their studies in the higher departments of Literature or Science an opportunity of displaying the proficiency attained by them. Upon this principle the higher Mathematics and Modern History included in the curriculum of the Madras University, the Greek and Latin Classics and Greek and Roman History which are studied in many of the other Schools, and the Ethics of the Bible which come within the scope of the instruction given in the Missionary Institutions, were added to the list; such marks being assigned to each subject as were deemed by the Examiners fairly to represent the amount of intellectual exertion demanded for its acquisition.

Small number of Candidates.

40. It is to be regretted that so few Candidates should have presented themselves for examination. There were in fact but six competitors, for, of the seven who presented themselves, one discontinued his attendance after the second day's examination. Of the six who attended throughout, five were students of the University, the sixth being a student of the Vepery Mission Seminary. Butthough the attendance of Candidates was small, the result of the Examination was most creditable, and afforded ample proof of the solidity of the instruction imparted in the two Institutions from which the Candidates came. We would draw particular attention to the remark of the Examiners in the 20th para. of their report that those who have been most successful in the essential subjects have also been most

Result of the Examination most creditable.

successful in the others, and to the conclusion deduced by them therefrom that "the higher branches of knowledge have "not been acquired at the expense of the lower, but that the "education of these young men has been sound and well "grounded."

Examination very efficiently conducted.

41. The Examination was of a most searching character and was conducted in a very efficient manner, and we have much satisfaction in expressing our full concurrence in the opinions of the examiners that the three Candidates placed first in their report T. Mootoosawmy, V. Rajahgopaul and A. Narrain Row have fully established their claims to the three Rewards of Rs. 500, Rs. 300, and Rs. 200 respectively which have been offered by Government for competition, and which we accordingly beg to recommend may be conferred on them.

Names of Candidates recommended for the Government Reward.

42. In accordance with the terms of the Notification issued by us on the 10th November last, the names of these candidates, as well as those of the unsuccessful candidates, who have all exhibited more than an average amount of ability and information, will be published in the Official Gazette and will be communicated by letter to the Heads of Offices at the Presidency and in the Mofussil.

Concurrence of the Board in the alterations proposed by the Examiners in the scheme of Examination.

43. We approve generally of the alterations proposed by the Examiners in the scheme of examination for future years, and especially of their suggestion that no extra subject should be permitted to count at all unless a reasonable proficiency be attained in it. The rule proposed by them that one-third of the whole number of marks allotted to each of these subjects shall be demanded appears well calculated to meet the object in view and will be adopted in the notification for the examination of the ensuing year, which will be laid before Government at an early

Except in regard to the proposed addition of the subject of Jurisprudence in which no means of instruction are at present available

date. In regard to the additional subjects named by them we think it would be premature to institute an examination in the principles of Jurisprudence until adequate means of instruction shall have been provided. Our proposal to establish a Law Professorship in the University if sanctioned by the Home Authorities will render this subject an appropriate addition to the extra subjects of examination at some future time.

Notice of Mr Key's retirement

44. We cannot conclude this report without recording the expression of our sincere regret at the retirement of our late Colleague Mr. T. Key and of the high estimation entertained by us of his valuable services as a Member of our Board.

We have the honor to be,
Right Honorable Sir,
Your most obedient Servants,

(Signed) J. OUCHTERLONY,
„ T. PYCROFT,
„ C V CUNNIAH CHETTY,
„ G BALFOUR,
„ W. J WILSON,
„ F RENCONTRE,
„ P. CARSTAIRS.

MADRAS UNIVERSITY,
12*th April*, 1854.

SYNOPSIS OF SUBJECTS STUDIED IN THE MADRAS UNIVERSITY DURING THE YEAR 1853.

ENGLISH DEPARTMENT.

COLLEGIATE CLASSES.

3d Class.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination*
Literature.....	Shakspeare.....	The Merchant of Venice...	The whole.
	Chambers' Cyclopædia of English literature	The biographical and critical notices of the leading English Authors from the first period down to the reign of Charles I, with selections from some of them.	The whole.
Philosophy of History.....	Guizot's History of Civilization.....	Lectures I—X.....	do.
Moral Philosophy.....	Smith's Theory of Moral sentiments.....	Parts I—III.....	do.
Natural Philosophy.....	Newton's Principia.....	Sections I—III, and the Appendix.....	do.
	Brewster's Optics, with Mathematical demonstrations from Griffin...	The whole of Brewster except the chapters on the polarization of light and double refraction.....	do.
Differential Calculus.....	Miller's Differential Calculus, and Lectures.....	The principal portions relating to the differentiation of a single variable	do.

2d Class.

Subjects	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Literature	Shakspeare	Julius Cæsar	The whole
	Pope's works	The Essay on Criticism..	do
History	Russell's Modern Europe	The first 29 Letters	do.
Political Economy	Mrs. Marcet's conversations on Political Economy	Pages 14—318	do.

2d Class.—(Continued.)

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Astronomy	Moseley's Lectures on Astronomy	Lectures 1—45 and the 50th with Mathematical proofs of certain propositions	The whole.
Mathematics ...	Hann's Spherical Trigonometry	The first 40 articles omitting the 36th	do.
	Hann's Conic Sections...	The straight line, circle and ellipse	
Composition ...	.....	Answering Questions in writing, paraphrasing and occasionally composing original Essays	
Elocution	.....	Selected passages from Shakspeare and Pope	

1st Class.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Literature	Calcutta Poetical Reader No. IV	"Gray's Elegy," "The Traveller" and "The Vanity of human wishes"	The whole.
	Bacon's Essays	Essays 1—5, 7, 9—11, 12, 13 and 15	do.
History	Taylor's Manual of Modern History	Chapters 1—IV	do.
Natural Philosophy	Whewell's Mechanical Euclid	Statics and Hydrostatics.	do.
Mathematics ..	Hann's Plane Trigonometry	The whole	do.
	Euclid	Book XI.—21 propositions.	do.
	Kelland's Algebra	Permutations and Combinations, Indeterminate co-efficients, Binomial Theorem, use of Logarithms, Arithmetical, Geometrical and Harmonical Progressions...	do.
Composition ...	.....	Answering questions in writing, paraphrasing and occasionally composing original Essays.	
Elocution	.....	Elementary principles explained, and selected passages read	

HIGH SCHOOL.

5th Class.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
English History.	Pinnock's Goldsmith's England.....	From the Restoration to the Accession of Queen Victoria.....	From the Revolution to the accession of George IV.
Indian History and Geography.	Symonds' Geography and History of India.....	Chapters 8—24.....	The whole.

5th Class.—(Continued.)

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
General Geography	Goldsmith's Geography..	Definitions, and 14 Problems on Terrestrial Globe, with Maps generally and Globe	The whole.
Poetry.....	Calcutta Poetical Reader No. III.....	"The Deserted Village," "The Traveller" and "The Vanity of human wishes".....	do.
Arithmetic....	From the Tutor.....	The whole.....	do.
Euclid.....	Williams' Symbolical Euclid.....	Books III, IV. and VI...	do.
Algebra.....	Pinnock's Catechism of Algebra Part II.....	The whole.....	do.
Reading.....	Murray's Reader.	Selected portions.	
Composition....	.....	Paraphrasing, writing abstracts and answering questions in writing....	

4th Class.

Subjects.	*Books.*	*Portions read during the Year*	*Portions for examination.*
History	Pinnock's Goldsmith's England	Chapters 1—29	Chapters 4—27.
Geography	Symonds' Geography and History of India	Chapters 4—8	The whole.
do.	Goldsmith's Grammar of Geography	Asia, Africa and America in general	do.
Poetry	Calcutta Poetical Reader No. III	Selected portions viz "A Thought at sea" "Memory" "Verses written in the character of A Selkirk" "The Hermit" "The Ocean" "Gray's Elegy" "The Mariners of England" "The battle of Hohenlinden"	do.
Arithmetic	Bonnycastle's Arithmetic	Interest Simple and Compound, and Extraction of Square and Cube roots	do.
Euclid	Williams' Symbolical Euclid	The first two books	do.
Algebra	Pinnock's Catechism of Algebra	The first part	do.
Reading	Murray's Reader		

3d Class.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination*
History	Pinnock's Goldsmith's Roman History	From the conspiracy of Catiline to the end of the reign of Marcus Aurelius	The whole.
Geography.....	Goldsmith's Grammar of Geography	Europe and Africa	do.
Poetry	Gay's Fables	Fables 1—8 of Part II	do.
Grammar.....	Murray's Abridgment of Grammar	The whole with parsing ..	do

3d Class.—(Continued.)

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Arithmetic.....	Bonnycastle's Arithmetic.	Vulgar and decimal Fractions, Extraction of the Square root, Simple and Compound Proportions, and Simple Interest ...	The whole.
Reading	Roman History.....		

2d Class, Division B.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination*
History	Pinnock's Goldsmith's Roman History	Chapters 2—18	The whole.
Geography	Goldsmith's Grammar of Geography	Asia and America	do
Poetry	Gay's Fables	Fables 29—40	do.
Grammar.....	Murray's Abridgment of Grammar	The whole	do.
Arithmetic	Bonnycastle's Arithmetic.	Vulgar Fractions and Simple and Double Rule of Three	do
Reading	Roman History.....		

2d Class, Division A.

Subjects.	*Books.*	*Portions read during the Year*	*Portions for examination.*
History.....	Pinnock's Goldsmith's Roman History	Chapters 1—18.	The whole.
Geography.....	Goldsmith's Grammar of Geography	Asia and America.	do
Poetry	Gay's Fables.....	Fables 4—7, 9—11, 13, and	
Grammar..	Murray's Abridgment of Grammar.....	14.....	do.
		Orthography, Etymology and Syntax	do.
Arithmetic....	Bonnycastle's Arithmetic	Vulgar Fractions, Rule of Three—Simple and Compound and Practice.....	do.
Reading.....	Roman History		

1st Class, Divisions A. and B.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
GrecianHistory	Outlines of Grecian History.....	Chapters 1—3 and 11—17	The whole.
Geography	Pinnock's Catechism of Geography	Europe and Asia.....	do.
Grammar	Principles of Grammar....	The first three parts.....	do.
Arithmetic	From the Tutor.	The four Simple Rules, Simple and Compound Reduction.....	do.
Reading.....	Grecian History.....		

PRIMARY SCHOOL.

3d Class—3d and 2d Divisions.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Reading and Spelling	Æsop's Fables	Fables 1—100	The whole.
Grammar	Elements of English Grammar	Orthography and Etymology	do.
Geography	Clift's Geography.	Asia	do.
Arithmetic ...	From the Tutor	The four Simple Rules ...	do

3d Class—1st Division.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Reading and Spelling ...	Æsop's Fables	Fables 1—118	The whole.
Grammar	Elements of English Grammar	Orthography and Etymology	do.
Geography	Clift's Geography	Asia	do.
Arithmetic	From the Tutor	The four Simple Rules ...	do.

3d Class— Supernumerary Division.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Reading and Spelling	Æsop's Fables	Fables 1—80	The whole.
Grammar	Elements of English Grammar	Orthography and Etymology	do.
Geography	Clift's Geography	Asia	do.
Arithmetic	From the Tutor	The four Simple Rules ..	do.

2d Class—4th Division.

Subjects	*Books.*	*Portions read during the Year.*	*Portions for examination*
Reading and Spelling ,....	English Reader	From the 29th Lesson of Chapter III. to the end.	The whole.
Grammar	Elements of English Grammar	Orthography and Etymology	do.
Arithmetic	From the Tutor	The four Simple Rules	do.

2d Class—3d and 2d Divisions.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Reading and Spelling	Calcutta Reader No. I ..	Chapters 1 and 2, and 13 Lessons in Chapter 3	The whole.
Grammar	Elements of English Grammar	From the commencement as far as the Verbs	do.
Arithmetic	From the Tutor	Numeration and Addition.	do.

2d Class—1st Division.

Subjects.	Books.	Portions read during the Year	Portions for examination.
Reading and Spelling	English Reader No. I....	The first 5 Chapters.	Chapter 2.
Arithmetic	From the Tutor..... .	Numeration	The whole.

1st Class.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Reading and Spelling.....	English Spelling Book No. I	The whole by 20 boys; Portions by the remainder	The whole by 20 boys; the first half by the rest.
Arithmetic	From the Tutor	Counting and making figures	do.

VERNACULAR DEPARTMENT.

COLLEGE AND HIGH SCHOOL CLASSES.

TAMIL.

4th Class.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Grammar	Nunnool	Uyereetu punareyal, Meyietu punareyal, Urapoo punareyal	The whole.
Poetry	Kural	Chapters 85—108	
Reading	Veratapavum	The whole	The whole

3d Class.

Subjects.	Books	Portions read during the Year	Portions for examination.
Grammar	Nunnool	Eluteyal and Padaveyal ..	The whole.
Poetry	Needinerœvelackum	Pages 1—50	do.
Reading	Punchatunthrum	The whole	Pages 71—99 do

2d Class.

Subjects.	Books	Portions read during the Year.	Portions for examination.
Grammar	Balabotha Elackanum ...	Eluthathicaram and Section I of Sollathicaram	The whole.
Poetry	Vackundan and Nelavuly.	Pages 1—32	do.
Reading	History of the Discovery of America	Pages 1—70	Pages 1—50

1st Class—2d Division.

Subjects.	Books.	Portions read during the Year.	Portions for examination
Grammar	Balabotha Klackanum	Pages 1—55	The whole.
Moral Sentences	Condryvenden and Vetty Verkl	Pages 1—25	Pages 1 —19.

1st Class—1st Division.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Spelling	Seroovar Payerchee	Pages 1—80	The whole.
Reading	Balabotham	The whole	do.

TELOOGOO.

4th Class.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Grammar	Nunniah Puttium	Pages 1—80	The whole.
Reading	Verata Purvum	,, 3—20	do.
Moral Fables ..	Neethichundrica	,, 1—49	do.

3d Class.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Grammar	Prasnothra Viacurnum ..	Pages 1—10	The whole.
Reading	Subha Purvam	,, 1—60	Pages 1—8.

2d Class.

Subjects	Books.	Portions read during the Year.	Portions for examination.
Grammar	Vuchana Viacurnum	Pages 1—'4	The whole.
Morals	Burthrooharee	,, 1—30	do.
History	History of Hindostan	,, 1—28	do

1st Class—2d Division.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
A Sketch of the History of Rama	Ramayana Sungrahum ..	Pages 1—20	The whole.
Grammar	Vuchana Viacurnum	,, 1—14	do.
Morals	Vamanaputhium	Verses 1—50	do.

1st Class—1st Division.

Subjects	*Books*	*Portions read during the Year*	*Portions for examination*
History	Vikramarka Charithrum	Pages 1—10	The whole

MAHRATTA.

4th Class.

Subjects.	*Books*	*Portions read during the Year.*	*Portions for examination*
History	Grant Duff's Mahratta History	Chapter V Pages 1—80	The whole.
Berquin's Children's Friend	Balamithra. Vol I	Pages 1—60	do.
Natural Theology	Youth's Book on Natural Theology	,, 1—48	do.
Grammar	Gungader's Grammar ..	,, 1—51	do

3d Class.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination*
History	Mahratta abridgment of Elphinstone's History of India	Pages 1—106	The whole.
Grammar	Balaviacurnum	The whole	do.
Berquin's Children's Friend	Balamithra, Vol II	Pages 1—51	do.
Writing from Dictation			

2d Class.

Subjects.	*Books.*	*Portions read during the Year.*	*Portions for examination.*
Moral History .	Neethi Durpanum	Pages 1—75	The whole.
History	Jogathy Jothee	,, 1—51	do.
Writing from Dictation			

1st Class.

Subjects.	*Books.*	*Portions read during the Year*	*Portions for examination.*
Spelling Book .	Lepidara	Pages 1—25	The whole.
Moral History .	Bodacada	,, 1—20	do.
Writing from Dictation			

PRIMARY SCHOOL.

TAMIL.

3d Class.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Grammar.....	Bolabotha Elackanum	Eluthathicaram and first two Sections of Sollathicaram	Eluthathicaram & Section I. of Sollathicaram.
Poetry	Vackundam and Nulavaly	Pages 1—32	The whole.
Reading	History of the Discovery of America	Pages 1—70	Pages 1—50

2d Class.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Grammar	Balabotha Elackanum	Pages 1—71	Pages 1—55.
Moral Sentences	Condryvanden	,, 1—25	,, 1—19.
Reading.....	History of Hindostan	The whole	,, 1—16.

1st Class—2d Division.

Subjects	Books.	Portions read during the Year.	Portions for examination.
Grammar	The Elements of Grammar	Eluthathicaram & Section 1 of Sollathicaram	Eluthathicaram.
Moral Sentences	Athisoody	The whole	The whole.
Reading	Balabotham	do	do.

1st Class—1st Division.

Subjects	Books	Portions read during the Year	Portions for examination
Spelling	Seeruver Payerchee	Pages 1—30	Pages 1—22

TELOOGOO.

3d Class.

Subjects.	Books.	Portions read during the Year	Portions for examination
Grammar	Prusnotharanthra Viacurnum	Pages 1—20.....	The whole.
History	Hindoostany Charithum	,, 1—28	do
Morals	Neethi Sungrahum	Verses 1—75	Verses 1—50.

2d Class

Subjects	*Books.*	*Portions read during the Year*	*Portions for examination*
Grammar ...	Vuchana Viacurnum	Pages 1—14	The whole.
History	Ramavana Sungrahum ..	The whole	Pages 1—25.
Morals	Vamana Puthium	Verses 1—50	The whole

1st Class—2d Division.

Subjects.	*Books*	*Portions read during the Year.*	*Portions for examination*
Conjugation of Verbs and Declensions of Nouns	Vebuctheebotham	Pages 1—23	The whole
Reading	Vikramarka Charithum	„ 1—40	do

1st Class—1st Division.

Subjects	*Books*	*Portions read during the Year.*	*Portions for examination.*
Spelling	Atchara Gutchum	The whole	Pages 1—28

MAHRATTA

2d Class

Subjects.	*Books*	*Portions read during the Year*	*Portions for examination*
Moral Fables	Æsop's Fables	Fables 1—50	The whole
History	Catechism of Mahratta History	Pages 1—48	do.
Grammar ..	Balavyacurnum	The whole	do
Writing from Dictation ...			

1st Class.

Subjects.	*Books*	*Portions read during the Year*	*Portions for examination*
Spelling	Lepidara	The whole	The whole
Moral Fables .	Neethouda	Pages 1—25	do.
Writing from Dictation			

APPENDIX B.

QUESTIONS PROPOSED TO THE SENIOR SCHOLARS OF THE COLLEGE DEPARTMENT.

English Literature.

1. Mark briefly the successive steps in the progress of English Literature to the time of Chaucer.

2. Give a brief sketch of the life of Chaucer. How is his character supposed to be developed by his writings? What is the plan of the Canterbury tales? Whence derived?

3. What difficulty exists in fixing from the following passages the period of the year at which the Canterbury pilgrimage was commenced? What explanations have been offered of the difficulty?

> "Whanne that April with his showers sote
> The drought of March had perced to the rote
> "And the yonge sonne
> Hath in the Ram his half course yronne."

4 State a few peculiarities of Chaucer's metre? Explain the following words, Couthes, Hir, Esed, Yerde, Wimple, Fetise.

5. Which is the third period of English Literature? What great names marked it? What permanent character is impressed upon its productions?

6. Who are supposed to have been Spenser's models? What are his peculiar merits? From what are his defects supposed to have arisen? What has diminished the interest of his great work? Under what external circumstances was it written?

7. What is the character of Ben Jonson's comedies? Of his tragedies? What relation do the products of his genius bear to those

2d Class.

Subjects	Books.	Portions read during the Year.	Portions for examination
Grammar	Vuchana Viacurnum	Pages 1—14	The whole.
History	Ramayana Sungrahum...	The whole	Pages 1—25.
Morals	Vamana Puthium	Verses 1—59	The whole.

1st Class—2d Division.

Subjects.	Books	Portions read during the Year.	Portions for examination.
Conjugation of Verbs and Declensions of Nouns.....	Vebuctheebothani	Pages 1—23	The whole.
Reading	Vikramarka Charithum	„ 1—40	do.

1st Class—1st Division.

Subjects	Books	Portions read during the Year.	Portions for examination.
Spelling...	Atchara Gutchum	The whole	Pages 1—28

MAHRATTA

2d Class.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Moral Fables ..	Æsop's Fables	Fables 1—50	The whole
History	Catechism of Mahratta History	Pages 1—48	do.
Grammar	Balavyacurnum	The whole	do.
Writing from Dictation			

1st Class.

Subjects.	Books.	Portions read during the Year.	Portions for examination.
Spelling	Lepidara	The whole	The whole
Moral Fables ..	Neetieuda	Pages 1—25	do.
Writing from Dictation ...			

6. Distinguish between pity and sympathy.

7. State what is necessary to our being able to sympathise with the gratitude of the person who has been benefited by the actions of another.

8. Name and explain the nature of those passions which hold an intermediate place between the social and unsocial.

9. How does Smith account for the origin of our sense of justice?

10. Explain how our sense of duty is formed.

11. On what two occasions do we examine our own conduct and endeavour to view it in the light in which the impartial spectator would view it?

12. State the objections which have been brought against Smith's theory, especially by Dr. Brown.

Newton's Principia, Sections I, II and III.

1. Give Newton's definition of a limit, and any other with which you may be acquainted.

2. Employ the method of limits to find the volume of a pyramid.

3. Define *force*, *velocity*, and prove $F = 2 \text{ limit } \frac{\text{Space}}{(\text{time})^2}$ where F denotes a finite accelerating force acting on a body at rest.

4. The diameter of curvature $= \text{limit } \frac{(\text{Arc})^2}{\text{subtense perpendicular to the tangent}}$; prove this, and hence find the diameter of curvature at any point of an ellipse.

5. A body moving in any orbit about a fixed centre of force, the velocity at any point varies as $\frac{1}{\text{perpendicular on the tangent}}$.

6. A body moving round a fixed centre of force, the space due to the velocity at any point is one-fourth of the chord of curvature at that point through the centre of force.

7. Find the law of force by which a body may describe a semi-circle, the centre of force being at an infinite distance.

8. If a body be projected in a direction making any angle with its distance from a fixed point, and be attracted to that point by a force varying as the distance, it will describe an ellipse, whose centre is the centre of force. Find the position of the axis major of the orbit.

9. A body moves in a parabola, find the law of force tending to the focus.

10. In an ellipse described by a body about a circle of force in the focus, find the velocity and the periodic time.

Optics.

1. Enunciate the laws of reflexion and refraction of light at the surface of a medium.

2. Find the geometrical focus of a pencil of rays after direct reflexion at a spherical surface; and determine the several positions of the focus for convex and concave surfaces,—also when the pencil is divergent, convergent, or consists of parallel rays.

3. Trace the formation of an image formed by a convex mirror, and determine its magnitude.

4. Trace the axis of a pencil of rays through a prism, and find its deviation, its course being in a plane perpendicular to the edge. Under what conditions will total reflexion take place?

5. Find the geometrical focus of a pencil after direct refraction through a lens (neglecting its thickness); and hence find an expression for the focal length of a lens.

6. Find the focal lengths of a plano-convex and an equally convex lens (radius 4 inches in each case); also of an unequally convex lens (radii 9 and 4 inches); the glass having a refractive index of 1, 5.

7. Trace the formation of an image by a lens, and shew when it will be erect, when inverted, when magnified, and when diminished.

8. Explain the cause of spherical aberration; and show how it may be corrected in lenses.

9. Give a brief sketch of the results of the analysis of light by the prism.

10. What is chromatic aberration; explain the principle on which it is corrected in telescopes.

11. Describe the eye, and explain the manner in which vision takes place.

12. What are the defects of vision, and how may they be remedied?

13. Investigate an expression for determining the magnifying power of a lens.

14. Describe Newton's Telescope, and trace by a figure the course of a pencil from the object seen through it. Find the magnifying power, and find the field of view.

15. Explain the formation of the Rainbow.

16. State the doctrine of the interference of light, and to what theory of light it seems best to accord.

Differential Calculus.

1. Give the meaning of function, differential and differential coefficient. Also explain the object of the differential calculus.

2. Obtain the differential coefficient of versin x, a^x and $\log_e x$.

3. Differentiate u with regard to x, where $u = e^x \sqrt{\frac{1+x}{1-x}}$.

4. Prove Taylor's Theorem, and obtain Mc. Laurin's from it. Apply the latter to get a series for sin x.

5. The refraction of the moon being taken at $58''$ tan Z and her parallax at 59 sin Z, find the moon's zenith distance when the total effect of refraction and parallax is a maximum, and also the amount of that effect.

6. Find the volumes of a cone, a sphere and a paraboloid; and prove Archimedes' famous proposition.

7 Prove the agreement of Newton's expression for the radius of curvature with the formula

$$r = \frac{\left(1+\left(\frac{dy}{dx}\right)^2\right)^{\frac{3}{2}}}{\frac{d^2y}{dx^2}}$$

Find the radius of curvature to the curve $y = \frac{1}{2}(e^x + e^{-x})$ at the point $x = 0$.

8. Trace the curve $y = \frac{x^3}{a^2}$; and find its inclination to the axis x at the point for which $x = \frac{a}{\sqrt{3}}$

9. The sun's declination will be in June 1854,

on the 19th....23° — 26 — 28·″2
20th....23 — 27 — 13
21st,....23 — 27 — 32·9
22d....23 — 27 — 28; find when it will be a maximum, and also the value it will then attain.

10. Find an expression for the subtangent in terms of differentials, and apply it to obtain that line in the case of a circle, a parabola, and an ellipse.

11. Show that for a multiple point $\frac{dy}{dx}$ will assume the form $\frac{0}{0}$, and state the procedure we must adopt in that case.

12. Find the value of $\frac{x^3 - 3x + 2}{x^4 - 6x^3 + 8x - 3}$ when $x = 1$.

APPENDIX C.

SELECTED ANSWERS OF THE SENIOR SCHOLARS OF THE COLLEGE DEPARTMENT

English Literature.

Q. 1. Mark briefly the successive steps in the progress of English Literature to the time of Chaucer.

A. 1. The English language essentially a branch of the Teutonic, a language spoken by Central Europe, and from which the present German Dutch and Danish take their origin, was introduced into the island in the fifth century at the invasion of the Saxons. For about five centuries after its first introduction it underwent very little changes, the only additions that it received being fresh accessions of words from the Latin brought in by the Christian Missionaries. During this period learning was chiefly confined to the Members of the Clerical order, many of whom were men of great genius and industry. But in the eighth century when manuscripts were multiplied by the labours of these men, and learning descended to the higher orders of the lay society, English Literature presents itself in the form of historical chronicles, theological treatises and religious and narrative poetry. The versification was neither rhythmical like that of Latin nor rhymed, but written in a regular alliteration, an arrangement in which two words in every line commenced with the same letter, which also was made the initial of the emphatic word in the next. Works were chiefly composed in Latin up to the eighth century when Cœdmon, Bede, Alfred and Alfric and several others wrote in the vernacular tongue to reach the commonalty. At the Norman conquest when a Norman Government and a Norman nobility were introduced, and Norman French took possession of the Court and the higher circles, and the Saxon shared the same degradation with the people by whom it was spoken. All proceedings and legal documents were written in the new tongue by orders of Edward the Confesser who had a great predilection for Norman

manners and usages, and of William the Conqueror and his Successors. All the poets and writers of this period were almost all of them of Norman origin; so that it affected greatly the Native tongue. The influence of this introduction of the Norman French upon the Saxon language has been strokingly compared by Campbell to the effects of a great inundation which though at first destroys all vegetation and covers the whole landscape with water, but yet leaves behind it elements of fresh scenes and fertility. It was about this time that romantic fiction was introduced into England from Bretagne, whither the ancient Britons had carried the fabulous and national tales in their emigration from Wales, and which province had been for a long time the unfailing source that supplied almost the whole of Europe with fiction and romance.

In the middle of the 12th Century about the year 1150 when Layamon gave a Saxon translation of the "Brutus of England," the language might be seen to take that shape from which the present English takes its form. Thus we see that the Norman French kept possession of the higher orders and the schools for a considerable length of time. But when the glorious and warlike Edward III. ascended the throne, the rising importance of the commons who now began to acquire a share and place in their Government, the increasing hostilities between England and France, the public mandate of the King which ordained the use of the English language, and the blending of the Normans and Saxons, into one nation, powerfully contributed in hurling down the Norman French from its once exalted station, and in advancing the native tongue which now became the language of fashion and education. Moreover about this time the allegorical style of composition was introduced from Italy, and miscellaneous poetry commenced to be cultivated. It was in this state that Chaucer found the English literature when he first appeared as a poet.

V. RAJAHGOPAUL.

Q. 2. Give a brief Sketch of the life of Chaucer. How is his character supposed to be developed by his writings? What is the plan of the Canterbury tales? Whence derived?

A 2. Chaucer the great literary star of the 14th century was

born about the year 1328. Some supposed that he received his education at Cambridge and others are for Oxford He accompanied Edward III. to France in his wars with that country. On his return from thence he travelled to Italy, and is supposed to have visited Petrarch. He was also employed in several political missions. He entered in an intrigue with some of his friends, but finding that he was in the danger of being apprehended, he fled to the country of his wife. On his return home he was imprisoned, and was obliged to make a full confession, and he even went so far as to accuse his companions. A pension was granted him on the accession of Henry IV. and Chaucer retired to Woodstock where.he died in peace.

In short he was a courtier, a soldier, and a scholar, he moved in different circles and well understood their manners and feelings. His character may be best seen in his writings.

He had a peculiar liking and taste for natural objects as may be seen from the pleasure he takes in making frequent allusions to them and in writing upon such subjects. He was of a mirthful temper, for he takes no gloomy views of things, but looks upon them with a cheerful aspect. He had a very strong aversion for priestly abuse and deceit, for he directs his keen attacks against them.

The most important of Chaucer's productions is his " Canterbury tales." He borrowed the plan of this great work from Boccaccio, who in his Decameron supposes a party of gentlemen and ladies to retire from Florence when that city was visited by a plague, and amuse themselves by telling loose stories. Chaucer improved upon this plan ; he supposes a company of persons all bent on a pilgrimage to Canterbury, to meet in the Tabard Inn where the host proposes that they should travel together, and that each of them should tell a story on going and returning, in order to lessen the tediousness of the journey, and that whoever should tell the best story should have a dinner at the expense of the rest. This is the plan of the " Canterbury Tales."

P. CHINNATUMBEE.

Q. 5. Which is the third period of English Literature? What great names marked it? What permanent character is impressed upon its productions?

A. 5. The third period of English Literature extending over an interval of eighty or ninty years from the accession of Elizabeth to the period of the restoration is the most glorious in the annals of any history. The revival of the study of classical literature, the invention of printing, the Reformation, and the substitution of the philosophy of Plato for that of Aristotle every where gave impetus and brought about the prodigiously rapid development of English Literature in this period. Not only the Greek and Roman writers but those of modern Italy and France were translated and diffused liberally through the press. The translation of the Bible while it gave permanency to the language introduced antique and oriental images to which the Western European nations were before foreign. Great names marked this period of English Literature.—We see in this short interval of about sixty or seventy years the names of almost all the great literary men that England has ever produced, the names of Shakspeare and Spenser, Barrow and Taylor, Bacon and Hobbes and many others. The literary productions of this period are remarkable for their variety and originality. They are not confined to a single department of human knowledge; the English genius of the sixteenth century was displayed equally in poetry, philosophy, mathematics and history.

P. VURDA CHARRY.

Q. 6. Who are supposed to have been Spenser's models? What are his peculiar merits? From what are his defects supposed to have arisen? What has diminished the interest of his great work? Under what external circumstances was it written?

A. 6. Ariosto and Dante are supposed to have been the great models of Spenser. However the poet of "The Faery Queen" is a man of very great original genius—though the plan of this work was borrowed from the Italian poet, yet the conception of its moral design and the allegorical characters, and the structure of the Spenserian stanza leave him the credit of originallity. In fertility and luxuriousness of fancy and in the sweetness of versification he is surpassed by none, not even by Shakspeare himself. His images are natural and striking, his illustrations are happy and the scenes of romantic enchantment which are found in the Faery Queen are al-

most endless. His versification is peculiarly mellifluous, and the effect produced upon the reader is precisely similar to that occasioned by the sonorous lyre.

A long time after the perusal of his work, we fancy that we hear the music of his verse. Though Spenser's merits were great, yet they were not unaccompanied by defects. His description is often tediously circumstantial and he groups together in his great work, objects which are not found in combination any where except in his Faery Land. These defects arose from his excellencies themselves. It was his command of musical language that led him to indulge in protracted and tedious description till he becomes almost repulsive to the reader. The use of double allegory and the want of unity have greatly diminished the interest of the Faery Queen.

This great work was written by Spenser during his residence in Ireland. He obtained from Elizabeth a grant of the portion of the confiscated estate of the Earl of Desmond. When he settled himself in Ireland (as it was one of the conditions of the grant) he had ample leisure to devote to the composition of the Faery Queen. It was under these circumstances that Spenser wrote his celebrated Faery Queen.

Q. 7. What is the character of Ben Jonson's comedies? Of his tragedies? What relation do the products of his genius bear to those of Shakspeare's? How do you think that Shakspeare would probably have differed in developing the character of Volpone?

A. 7. The comedies of Jonson are decidedly superior to his tragedies However his characters in the comedies are all conceived upon a wrong principle. They are all overdrawn, and they rather are impersonations of abstract virtues than faithful pictures of men and women. His comedies are mirrors, as it were, which reflect the manners of his age. The scenes are laid in England and the characters feel and act like Englishmen Hence it is that he is considered the founder of the regular English comedy

His tragedies are simple translations of Classic writers The speeches which he often puts into the mouth of characters are bodily taken from them. The style also is very stiff and rugged.

The products of his genius greatly differ from those of Shake-

peare. Jonson's characters act from single motives, while those of Shakspeare's act from mixed motives.

In Jonson they are impersonations of some single feeling ; but in Shakspeare they are actuated by a variety of feelings. Jonson's characters in a word are caricatures of humanity while of those Shakspeare are the portraits of men and women in the world. Volpone is rather a boldly conceived character of Jonson. He centers in him avarice lust and cunning. Though Volpone is probably the best of Jonson's characters, yet the way in which his conduct is developed is disagreeable. Mosca brings out his avarice by way of extravagant praise, and Volpone in order to delude legacy hunters affects the disagreeable symptoms of a man on death-bed. Mosca's praise though palatable to Volpone yet often goes beyond the bounds of credibility. Though it requires a great deal of cunning to imitate a person on death-bed, yet the sight of sickness accompanied with cought and dirty eyes is rather disagreeable. If Shakspeare had drawn the character of Volpone, he would have followed a quite different course. Shakspeare would not have overdrawn Mosca for bringing out the avarice of Volpone. He would have on the contrary made Volpone soliloquize after the manner of Shylock and bring some more characters whose conversation will develop his avarice. In bringing out his craft, Shakspeare would have made his hypocrisy display itself not in the mean manner of personating a sickly old man but in a way resembling thatof Richard III. In a word Shakspeare would have excited the same detestation against Volpone without provoking our disgust for the way in which the character would be developed.

T Mootoosawmy.

Q. 8 How does the prose of the Elizabethan age differ from that of our own ? What is the nature of the services which Lord Bacon rendered to Philosophy ?

A. 8. The prose of Elizabethan age differs considerably from that of the present age The language of that age was rugged and harsh, whereas smoothness and elegance characterise the language of the present age. Many latinised idioms and expressions were then frequently employed ; and although by such means much

force and strength were gained yet elegance and moothness were sacrificed. Bacon altered the method of philosophising then prevalent, and substituted one more practically useful. The former philosophers conceived a world of their own, and endeavored to deduce theories and rules, and apply them to nature; they tried to subject nature to the result of their strange fancy. Bacon became extremely disgusted with that method of philosophising.

He observed nature, collected facts, reflected upon them, and deduced from his reasonings certain general principles; he subjected them to the same investigation until he arrived at the most general law. This method is called the principle of induction. According to this method much progress can be made, and much advantage can be obtained. This was the great service which Bacon rendered to philosophy.

P. CHINNATUMBEE.

Shakspeare's Merchant of Venice.

Q. 1. What is meant by dramatic action forming a perfect whole? Shew that this supposed condition of a drama is not fulfilled by the present play Can you suggest any reason for Shakspeare's deviation?

A. 1. By dramatic action forming a perfect whole is generally meant the unity of feeling which is supposed to be an essential element of a regular drama. It is considered that the several incidents of a play should excite feelings which are in keeping with one another. The effects arising from a mixture of grave and comic events in the same play are jarring to one another. If the Poet therefore, they say, propose to describe a melancholy event, he should bring in only such incidents as tend to produce sorrow, pity or feelings akin to them. This supposed condition of a drama is not attended to by Shakspere. In "The Merchant of Venice" tragic and comic incidents are mingled with one another. The frightful operation of the revenge of Shylock and the distress of Antonio excite feelings quite contrary to those called forth by the marriage scene of Portia The

former is an occasion of anxious sorrow and compassion, while the latter is a scene of pleasantry and wit. This intermixture of opposite incidents is not however to be considered as a fault of Shakspeare. On the contrary it may be brought forward as an instance of Shakspeare's close imitation of nature. In the world prosperous and unfortunate events are not wholly separated the one from the other. The progress of a man in fortune is often impeded by some great calamity, and the suffering of a man in distress is lightened by some sudden gleam of fortune. It is therefore manifest that Shakspeare has only followed the footsteps of nature in mixing tragic and comic events together and violating what is called unity of feeling.

Q. 2. What is the nature of the plot of this play? What links connect the episodes with the main action?

A 2 In the management of the plot of the Merchant of Venice Shakspeare has exercised a skill and ingenuity unsurpassed by any writer in the annals of any theatre. He picked up two several tales that were then current among the people and has woven them together "without the slightest confusion or incoherence." The story of the bond and the incident of the caskets were entirely distinct and he has by his dramatic skill thrown them together by artfully making the one depend upon the other. It is the desire of Bassanio to obtain the hand of Portia, and the necessity he feels for money to go to his selection that make his friend Antonio sign to such a bloody bond. There is in addition to the two another petty incident of the poet's own making, the elopement of Jessica, which serves to increase the hatred of the Jew, and sharpens his spirit of revenge just when the unhappy merchant is almost in the power of Shylock. The poet moreover makes Portia take the most prominent part in the discomfiture of the Jew and the disentangling of Antonio from the Jew's implacable hatred and unjust pursuit. Thus we see that the plot of the merchant of Venice consists of three distinct stories admirably combined so as to help forward the main object of the play.

Q. 3. What conception do you understand Shakspeare to have formed of the character of Shylock? Illustrate and prove your views by quotations from the play.

A. 3. Shakspeare's character of Shylock the most prominent feature in the play interests us less by exciting our sympathy than our indignation. Revenge is his idol; he sacrifices all his other passions and feelings to it, and makes it the main spring of all his actions. At first we do not see this passion clearly and at that pitch to which it is afterwards carried by the force of circumstances, but yet it is there seeking retribution in all small matters for those insults that he suffers from the powerful Christians, as when he says to Jessica while he is about going to Bassanio's entertainment,

> I am not bid for love they flatter me,
> But I'll go in hate to feed upon
> The prodigal christian,

and while he is about to part with Launcelot,

> Drones hive not with me;
> Therefore I part with him, and part with him to one
> That I would have him help to waste
> His borrowed purse.

Avarice, next to this master passion, stands strongest in the Jew, deadens all feelings of paternal affection, and makes him break out into the most unnatural and harrowing imprecation, "I would, my daughter were hearsed at my foot and the ducats in her coffin." At the outset the poet represents him as the object of some sympathy and compassion; we pity him for the insults and indignities heaped upon him by his Christian foe whom we look upon with partial hatred when he "spits upon him, foots him as he would spurn a stranger cur over his threshold and calls him "misbeliever cut-throat dog" and by other insulting epithets. But when his revengeful design becomes disclosed, when through his avarice he forgets all natural affection, seizes upon the opening afforded him and insists upon rigid and inflexible justice against Antonio (which recoils at last upon his own head), without

> Glancing an eye of pity upon his losses
> Which have of late so huddled upon his bark
> Enough to press a royal merchant down
> And pluck commiseration
> From brassy bosoms and rough hearts of flint,

and when he is "incapable of pity" and remains unmoved by the divine eloquence of Portia when she delivers her speech on mercy then do we grow indignant at his obstinacy and implacable revenge, and regard him as

> The most impenetrable cur
> That ever kept with men,

of Salarino, and as the "dog Jew" and "villian Jew" of Solanio. Shakspeare again makes him excite our feeling of sympathy when his design is discomfited, for the harsh and ungerous treatment of the triumphful and intolerant christians. Such seems to be the conception which Shakspeare formed of the character of Shylock.

Q 6. Paraphrase and explain,—

> "O that estates, degrees and offices
> Were not derived corruptly! and that clear honour
> Were purchased by the merit of the wearer!
> How many there should cover, that stand bare?
> How many be commanded, that command?
> How much low peasantry would them be gleaned
> From the true seed of honor? and how much honour
> Pick'd from the chaff and ruin of the times
> To be new varnished?"

> "In law what plea so tainted and corrupt,
> But being seasoned with a gracious voice,
> Obscures the show of evil."

> "There is no vice so simple, but assumes
> Some mark of virtue on his outward parts.
> How many cowards, where hearts are all as false
> As stayers of stand, wear yet upon their chin
> The beards of Hercules, and frowning Mars;
> Who, inward search'd, have livers white as milk?
> And these assume but valour's excrement,
> To render them redoubted.

A. 6. O if honor and fortune were not obtained by crooked and unlawful means, but were bestowed upon those who are really meritorious, what wonderful changes would be wrought in the condition of mankind. Many that are now obscure and without dignity would then be elevated and invested with the robes of office. Many that now hold a commanding position, would

then be brought down to be commanded. On the one hand much meanness and vulgarity would then be detected among the true descendants of honorable men, whilst on the other much excellence and virtue would be gathered from the low and unhonored mass to be newly elevated and advanced.

Taking the case of law there is no argument so wrong and unvalid that its fallacy cannot be entirely hid from our view if delivered with grace and eloquence.

There is no vice so pure and unmixed that it does not put on an appearance of virtue. There are many men who look as valorous and fiery as Hercules and Mars, but when inwardly examined turn out to be the most arrant poltroons, and their courage is as untrustworthy as bulwarks of sand. This sort of men put on simply the most worthless part of valour to make themselves formidable and be respected.

V. RAJAGOPAUL.

Guizot on the Civilization of Europe.

Q. 1. Explain the term "Civilization." What two facts are comprised in it?

A. 1. The distinctive feature of civilization is progress. Though a country may be greatly deficient in material and intellectual happiness, yet, if it is progressing in either, it is immediately to be recognized as the seat of civilization. On the contrary, a people who make no progress cannot be said to undergo the process of civilization, notwithstanding the agreeableness of their external and internal condition. Hence it is that America, soon after it's colonization by the Europeans, might be said to rise in civilzation while India could not, notwithstanding the superiority of the latter to the former at that time in social and intellectual condition. Thus civilization is *progress* either of external or internal condition.

Two facts are comprised in the term civilization, viz. development of humanity and of society. Advancement either of the intellectual condition as in the Rome of Augustus or of the social as in the Rome of Fabricius is a necessary symptom of the existence of civilization.

T. MOOTOOSAWMY

Q. 2. What was the state of what we call "the country" in the early Roman times. Explain the term Municipality. What has Rome transmitted towards the civilization of Modern Europe?

A. 2. In the early Roman times, Rome herself was a great municipality and there were many others like her occupying an equally important position. Their institutions were more or less adapted for inhabitants shut up within the walls of a town, and every thing bore a municipal character. The country was entirely neglected, every one dwelt within the precincts of some town But it was cultivated, for it was thence that towns derived their subsistence. The proprietors had their residence in the cities, but they occasionally went out to inspect their domains, upon which they employed their slaves, who tilled and cultivated them. There were no populations scattered over the face of the country as we are at present accustomed to behold, except a few straggling huts of the slaves, no roads intersecting the land but the few that connected the towns with one another. In Gaul for example the country at a distance from the principal cities was frequently uncultivated and marshy. A municipality is a corporation or town enjoying certain rights and privileges The Roman empire has bequeathed to Modern Europe two important elements of civilization; first the municipal system with all its customs, and rules of governance containing the germ of liberty, and secondly the name of the Emperor and the maxim of his imperial majesty with its principles of order and subjection.

V. RAJAGOPAUL

Q. 3. Give any instance you remember of an attempt by any of the Roman Emperors to establish a representative Government in Gaul.

A 3. When the system of administration and military organization which prevailed in the bosom of the Roman Empire during her latter days became incapable of saving her from the dissolution which threatened her from without, it struck the Emperors whether hopes of general freedom or the representative system of Government could not prevent its decline. For example the Rescript of Honorius and Theodosius bear sufficient proof of the

attempt to introduce the system into Gaul. They ordained that the principal inhabitants of the town in that country should assemble at a certain period of the year in the city of Arles which they said being the centre of commerce and most advantageously situated would confer upon them the most incalculable blessings. They prescribed rules for their assembling and imposed fines according to their rank upon the absent members. The attempt, however failed for the inhabitants would not accept the boon.

V. RAJAGOPAUL.

Q. 4. Trace the three periods of the Christian Church (as distinguished from Christianity) up to the commencement of the 5th century. What influences has the Christian Church of that period exerted upon the civilization of Modern Europe?

A. 4. There are three distinct periods of the Christian Church up to the commencement of the fifth century. The first period is that in which it was an association arising from an identity of creeds. Men assembled together in order to enjoy an interchange of religious emotions. Its distinctive feature was the absence of a regular government. There was no system of doctrines and precepts and no discipline to ensure their propagation and observance.

But in the second period the Christian Church became a system of Government. A regular system of doctrines, precepts and discipline was then introduced and several classes of religious magistrates were instituted. This period was distinguished by the considerable influence which the body of the faithful exercised over the government. It was they that decided the system of doctrines, precepts and discipline, and the nomination of magistrates.

Unfortunately in the third period the case was quite altered. It was the period in which the government separated themselves from the governed. A body of priests and a regular government of their own furnished with all independent means of action then came into existence, often to sit heavily on the destinies of the people.

The Christian Church at this period has bestowed upon European civilization three important influences—the introduction of

a moral force, the upholding of a divine law or law of reason, and the separation of the spiritual from the temporal power.

T. Mootoosamy.

Q. 5. What two feelings in European civilization are traceable to the Barbarians of the fifth to the eighth Century?

A. 5. Modern civilization is indebted to the Barbarians of the fifth and the eighth centuries first for that feeling of personal independance or of individual liberty, which perished in the decay of the Roman Empire, and which could not be resuscitated from its ashes; and secondly for the principle or idea of military chieftainship, the ties that existed between the chief and his companions on a regularly graduated scale of subordination, which afterwards gave rise to the system of aristocratic organization so prevalent in the Feudal system. These two principles the barbarians brought with them from their primeval forests and introduced into European civilization.

Q 6 Show what great change in Society sprung from the feudal system; and what feelings we may trace to it.

A. 6 The change introduced into Society by the feudal system was that it completely altered the distribution of population over the face of the land. The people had been before accustomed to shut themselves up within the walls of towns, or to roam over the country in bands under the guidance of a chief. But upon the introduction of the Feudal system they were obliged to live isolated entirely and at a distance from their former companions. It was under the F. S that the social preponderance of the towns was transferred to the country. To this system are traceable that haughty feeling of independence with which the advantages of his situation inspired the Feudal lord and which continues to animate the breast of many a nobleman at the present day, and that respect due to women, as well as the hereditary spirit which received their grand development in its bosom.

V Rajagopaul.

Q 7. Compare the Feudal family with the Patriarchal of the old Testament; and the clans of Scotland.

A. 7 The patriarchal family formed a tribe It consisted of the

Patriarch or the chief, his wife and children, his relatives and the different generations that had sprung up around him. They all led the same life, and the chief subjected himself to the labors of the field as well as his followers In a word the existence and the interest of the chief were identical with those of his attendants. But the Feudal family formed no tribe. It was small and composed only of the chief, his wife and children. Nor their mode of existence and interests were same with those of the serfs. The chief was addicted to idleness and war, while the followers severely labored in the fields. In the feudal family, there was nothing morally in common between the feudal lord and his vassals. True it is that the feudal family bears some resemblance to the family of the clans of Scotland In both families, the chief was an idler and a warrior, while his followers servilely toiled in the fields. But all those that belonged to a clan bore the same name and proudly considered themselves to be as nobly descended as the chief himself. Moreover there were certain old traditions, and ideas common to the chief and the followers. In the feudal family the serfs bore not the same name with the chief and had nothing whatever in common with him In a word the feudal family had no type of any other civilization which has hitherto appeared on the world.

Q 8. When did Boroughs first take a prominent place in history ? Trace their rise. Describe a Borough of the 12th century

A. 8 The Boroughs came to take a prominent place in history about the middle of the 12th century when they obtained their enfranchisement.

On the overthrow of the Roman Empire the Boroughs were neither in state of liberty nor of servitude. They were exposed to all the evils of weakness but had the advantages of the considerable remains of the municipal institution and of the interference of their bishop, with their rulers. But they more subsequently degraded by the rapid increase of barbarism and found themselves under the necessity of entering the frame of feudalism like all, other elements of European civilization.

When the feudal system was once fairly established, industry and commerce revived in the midst of the boroughs, and raised them gradually to opulence and importance. The right of sanctuary of

churches invited to the boroughs many a powerful and wealthy fugitive and accelerated their progress in wealth and power.

In proportion to the increase of their wealth and power, the danger of spoiliation increased. The feudal lords who still retained a taste for the nomade and predatory life of Old Germany not only oppressed them by frequent extortions, but way-laid and plundered their goods. In order therefore to shelter themselves against the rapine and injustice of their Lords, they rose in insurrection and at last established their independence. From the period of their enfranchisement, they rose to considerable power and importance and occupied an important place in the history of European civilization.

A borough of the 12th century was governed by the burghers themselves and well provided against an external attack. There were burgher guards, and ramparts, and the houses were flanked by towers at angles and furnished with observatories which could warn them against the approach of an enemy at a distance. In word we see then every necessary arrangement made to repel the attacks of an enemy from the neighbourhood.

If we turn to the government, of the burghers, we see that they tax themselves, levy their militia, appoint their magistrates and exercise all the right of sovereignty. But when the magistrate is once nominated, he generally governs with arbitrary power, subject to no other check than what arises from popular insurrections.

But in their relations with the state or general society, they hold no important place. They approach the person of their sovereign or fief-lord with cringing humility of speech and are so modest in their pretensions that they display not even a shadow of the boldness and self-importance of the burgher of the 18th century. In a word, the borough was then every thing and the burgher order was nothing.

T. Mootoosawmy.

Q. 9. What is the great distinctive feature which distinguishes modern from primitive Europe? Between what centuries was this effected?

A. 9. In the primitive Europe there were all the elements necessary to constitute a government and a nation, there were the nobles, the clergy and a lay aristocracy; and yet there was no

government or nation. But in the modern Europe, we find these two great powers occupying the stage of the world; the action of a general influence over the country and the reaction of that country over the government which rules it. This is the great distinctive feature which distinguishes primitive from modern Europe, and the revolution was accomplished between the twelfth and sixteenth centuries.

P. VURDACHARRY.

Q. 11. What do you understand by "Royalty?" define it; show how it is well adapted for different forms of society.

A. 11. Royalty is defined to be the impersonation of supremacy of right and of that will which is just and reasonable and superior to all individual wills. This is its fundamental and invariable principle and it may assume various forms without altering its essential character so as to adapt itself to any form of society for which it may be intended. The will which is reasonable and just and of which royalty is the image, may be said to be either the divine will, or the resultant of the concurrent wills of mankind at large. In the former case it will adapt itself to civil or religious despotism where the king, or the Pope is the vicegerent of God, and in the latter, to a free government where the sovereign is the representative of the people.

Thus it is that royalty is said by Guizot to be "A head fitted for a multitude of bodies."

T. MOOTOOSAWMY.

Moral Philosophy.

Q. 1. State clearly the fundamental principle of Smith's theory.

A. 1. The fundamental principle of Smith's theory is that the primary objects of our moral perceptions are the conduct of our neighbours. That the judgments concerning our own conduct are simply the applications of decisions which we have already come to in regard to the character of others. Hence it is that his work consists of two distinct inquiries. The first has for its object to explain how we form an idea of the conduct of our

neighbours as right or wrong and as deserving of reward or of punishment; and the second shows clearly how—we come to see that our own conduct is proper or improper by sympathizing with their sympathy.

T. MOOTOOSAWMY.

Q. 2. What two distinct perceptions do our moral judgments include, both with respect to our own conduct and that of others?

A. 2. Our moral judgments both with respect to our own conduct and that of others include two distinct perceptions. 1st. A perception of conduct as right or wrong, 2dly. A perception of the merit or demerit of the agent. Upon these two different conditions depends our whole sense of moral approbation or of disapprobation.

V. RAJAGOPAUL.

Q. 3. Smith gives the name of propriety to that quality of conduct which moralists express by the word rectitude; and begins his theory by inquiring in what it consists and how we are led to form the idea of it. State the leading principles of his doctrine on the subject.

A. 3. Smith begins his theory by inquiring how we are capable of forming an idea of conduct as right or wrong. Before we can see what passes in the mind of another man it is necessary that we should change place in fancy with him. By the faculty of imagination, we place ourselves in his circumstances, and come to be influenced by his wants and sorrows. As to be in distress excites great sorrow, so to fancy that we are in distress excites some sorrow though far inferior in degree to what the person principally concerned feels. To this principle in our nature which enables us to bring home the case of our neighbour and to feel an emotion analagous to his, Smith gives the name of sympathy or fellow feeling. He then proceeds to show that sympathy arises not so much from a view of the passion as from that of the situation; for we feel deepest sorrow and commiseration for a mad man who insensible of his calamity sings, laughs and dances about in the street with joy.

Next he goes to show that sympathy is a source of double

blessing and that, to use the language of Shakspeare "it blesseth him that gives and him that takes"

Having thus shown the operation and the advantages of sympathy, he then proceeds to explain how we form a notion of rectitude. To say that a man's conduct is right or wrong, he maintains, is tantamount to saying that we do or do not entirely sympathize with him. That rectitude of conduct is simply a perception of coincidence of our sympathetic feelings with those of the person principally concerned, he endeavors to render clear by various illustrations. When we laugh at a jest to the same extent and in the same manner as another does, we cannot but admit the propriety of his laughter. When we admire a picture exactly as another, we must admit the accuracy of his taste. He moreover takes notice of an objection that may be brought against his explanation of our idea of rectitude. He says that we often meet in the street an individual with all the marks of deepest affliction. On inquiry we are told that he just then received the news of the death of his father. We then quietly pursue our way approving of his conduct, though our ignorance of his father and the circumstances under which he died may prevent us from sympathizing with him. Smith says that in this case we approve of his conduct under the belief that we can entirely sympathize with him if we took the trouble of inquiring about him and the circumstances of his father's death. Having thus explained our notion of rectitude, he proceeds to show that to express a passion strongly as proper or improper as the spectator can or cannot sympathize with it. As an illustration he takes notice of social, unsocial, selfish passions and those which take their origin from the body and from a peculiar turn of the mind.

T. Mootoosawmy.

Q. 5. What principles in our nature directly prompt us to reward and punish?

A. 5. The principles in our nature, which most directly and immediately prompt us to reward or punish, are those of gratitude or resentment. True it is that love and esteem or indignation and hatred would often interest us in or against the welfare of our neighbours. But love and esteem hatred and

disapprobation would be satisfied provided that the person who is the object of them is prosperous in the one case and miserable in the other, though not by our instrumentality. But this is not all that is necessary for the gratification of gratitude or resentment. The former requires not only that the person who is the object of it should be rewarded, but rewarded by us and for the benefit which he conferred upon us. On the other hand the latter demands not only that the person, who was the cause of some injury to us, should be punished, but punished by us and for the particular evil which he rendered to us. Hence it is that gratitude and resentment are the principles which most directly and immediately prompt us to reward in the one case and punish in the other.

Q. 6. Distinguish between pity and sympathy.

A. 6. Sympathy is more universal than pity. Pity is the sorrow which we feel for a man in affliction, but sympathy according to Adam Smith is not only this, but great deal more. It is our fellow feeling not only with the sorrow, but with any emotion of our neighbour. We sympathize as sincerely and as well with a man in prosperity as with one in adversity. The marriage of our friend elevates us with joy as much as his death depresses us with sorrow. In a word sympathy as used by Adam Smith, is our fellow feeling with joy, gratitude, sorrow, resentment or any emotion of our brethren; while the use of the term pity is restricted to our fellow-feeling with their sorrow.

T. Mootoosawmy.

Q 7. State what is necessary to our being able to sympathize with the gratitude of the person who has been benefited by the actions of another.

A. 7. In order fully to sympathize with the gratitude of the person benefited by the actions of another it is necessary that we should entirely enter into and go along with the motives of the benefactor. However great may have been the services done to the person thus obliged, we cannot approve of his gratitude unless our heart readily adopts and beats time to the motives

which actuated the agent. Thus gratitude of the person upon whom great estates and offices are bestowed merely because his name and surname happen to be the same with those of the giver or because he resembles his benefactor in his dress and appearance, seems to us mean and contemptible and we heartily reject all fellow-feeling with it. Our contempt for the folly and frivolousness of the agent prevents us from sympathising with the gratitude of him who has received those benefits. For example, James I., who showed not the slightest discernment in the choice of his favorites, but lavished all honors and offices from the most frivolous motives could not attach a single friend to his person during his last days: whilst the whole nobility and gentry of England risked their lives in the cause of his more frugal son, notwithstanding the cold and distant severity of his ordinary deportment.

V RAJAHGOPAUL.

Q. 8. Name and explain the nature of those passions which hold an intermediate place between the social and unsocial.

A. 8. Those passions which hold an intermediate place between the social and unsocial are the selfish passions. They are never so agreeable as the one set or so disagreeable as the other. In the former our sympathy is doubled, and in the latter it is divided between the person who has been the cause of the passion and the person who has been the object of it. Neither doubled nor divided sympathy interests us in the selfish passions. When excessive, they are not so agreeable as excessive benevolence or impartial humanity and not so disagreeable as excessive hatred or resentment.

P. VURDA CHARRY.

Q. 9. How does Smith account for the origin of our sense of justice?

A. 9. It is with the aid of the principle of sympathy that Smith explains the origin of our sense of justice. Man, says he, is a great lover of his own interest. When he views it without any regard to the opinion of his brethren, his own interest appears to him to be of far more importance than that of others. Though according to the proverb "He is the whole world to himself" yet he is per-

fectly aware that mankind at large cannot go along with the unnatural preference which he gives to himself. To them he is but one of the citizens, and his interest appears to be of no greater importance than that of any other person. If he would act so as to command their approbation, he finds that he should view his interest not so much in the light in which it appears to him as in that in which it appears to others. Consequently by the principle of sympathy he identifies himself with mankind at large and causes to distinguish the different courses of conduct which are objects of their approbation or disapprobation with the view of following the one or avoiding the other. Thus it is that man comes to form an idea of justice or injustice.

T. MOOTOOSAWMY.

Q 10 Explain how our sense of duty is formed

A. 10. It is by applying to ourselves the decisions that we form concerning the conduct and actions of other men that we acquire a sense of duty and a feeling of its paramount importance over all our principles of action.

It is by sympathy with the judgment and opinions of the impartial spectator; it is by imagining ourselves in his situation and circumstances, and endeavouring to view our own conduct and actions with his eyes and from his station that our sense of duty is formed If in this imaginary situation we approve of our own behaviour we call it just and proper, if otherwise unjust and improper. We also acquire our sense of duty by forming from experience certain general rules by which we endeavour on all occasions to regulate our conduct.

V. RAJAHGOPAUL.

Q 11 On what two occasions do we examine our own conduct and endeavour to view it in the light in which the impartial spectator would view it ?

A 11. We examine our own conduct and endeavour to view it in the light in which the impartial spectator would view it on two different occasions; first when we are about to act and secondly after we have acted. When we are about to act, the impetuosity of passion seldom allows us to consider what we are

about to do with the candour and impartiality of an equitable judge. For instance when we are under the influence of resentment, no punishment appears to us to be great for our enemy. That passion the most unsocial of all, would prompt us to consider even the death of our enemy as but a small compensation for the injury that has been offered us. After we have acted, we consider what we have done in the light in which it would appear to the cool and impartial spectator. We are sorry that we have yielded to the influence of passion and are filled with fear and remorse.

P. VURDA CHARRY.

Q. 12. State the objections which have been brought against Smith's theory—especially by Dr. Brown.

A. 12. Several objections have been brought forward against the theory of Dr. Smith. Our perception of conduct is right or wrong is according to this philosopher, nothing more than a perception of coincidence or want of coincidence between our sympathetic emotions and that of the person principally concerned. Dr. Brown says that no action can call forth our sympathy which is not accompanied with vividness of feeling to arrest our attention. Then, according to Smith, those actions which are not accompanied with a vivid display of feeling must be destitute of moral character.

Again Smith says that the coincidence of our sympathetic emotions with those of the person principally concerned ensures the presence of the quality of rectitude. Does he mean to say that sympathy *renders* the action right or *proves* it to be right? If the former, he denies the existence of the moral sense, and if the latter, as it is possible that minds of individuals may be differently constituted, to lie and steal may come to be considered as perfectly right and proper. These are the principal objections which have been advanced against the theory of Smith.

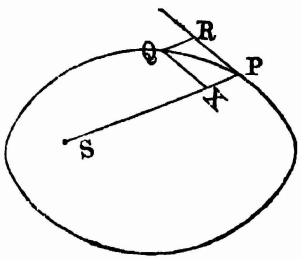
T. MOOTOOSAWMY.

Newton's Principia. Sections 1, 2 and 3.

Q. 1. Give Newton's definition of a limit, and any other with which you may be acquainted.

A. 1. Newton defines a limit as that state of an increasing or decreasing quantity, to which it continually approximates, but which it never reaches.

Let for example P Q be a small arc of an ellipse, S P a focal distance, and P R a tangent at P. From Q draw Q R and Q X ∥ to S P and P R. Here as the point Q moves up to and ultimately coincides with P, S X continually increases and becomes equal to S P in the limit.



When one variable depends upon or is a function of another, than that state to which the former attains when the latter becomes 0 is also the limit of that quantity. For instance,

$$y = ax + bx^2 + cx^3 + \&$$

$$\frac{y}{x} = a + bx + cx^2 + \&$$

When x becomes o, the function becomes $= a$ the limit.

V. Rajagopaul.

Q. 2. Employ the method of limits to find the volume of a pyramid.

A. 2. Let the area of the base of the pyramid be equal to A and the altitude be equal to h. If we divide h into n equal parts and take a section parallel to the base at the rth division,

$$\frac{\text{the area of the section}}{\text{the area of the base}} = \frac{\left(\frac{rh}{n}\right)^2}{h^2} = \frac{r^2}{n^2}$$

$$\text{the area of the section} = \text{A}.\frac{r^2}{n^2}$$

If we take a right prism upon this parallel section whose altitude is $\frac{h}{n}$,

the volume of this prism = A. $\frac{r^2}{n^2} \cdot \frac{h}{n}$

= A. $h. \frac{r^2}{n^3}$

$\therefore$ the volume of the pyramid = A. h $\overset{*}{\mathrm{E}} \frac{r^2}{n^3}$ where n is infinite.

$\therefore$ the volume = A. $h. \frac{1}{n^3} (1 + 2^2 + \ldots\ldots + n^2)$

= A. $h. \frac{1}{n^3} \left(\frac{n^3}{3} + \frac{n^2}{6} + \&c.\right)$

where n is infinite

$\therefore$ the volume of the pyramid = $\frac{\text{A. } h}{3}$

T. Mootoosawmy.

Q. 3. Define force, velocity, and prove,

$\mathrm{F} = 2$ limit $\frac{\text{space}}{(\text{time})^2}$, where F denotes a finite accelerating force acting on a body at rest.

A. 3. Force is the change of velocity in a given time; if the change of velocity be represented by dv and that of time by dt, $\mathrm{F} = \frac{dv}{dt}$; velocity is the change of space corresponding to a given time; *i. e.* representing the change of space by ds and that of the time by dt; $v = \frac{ds}{dt}$.

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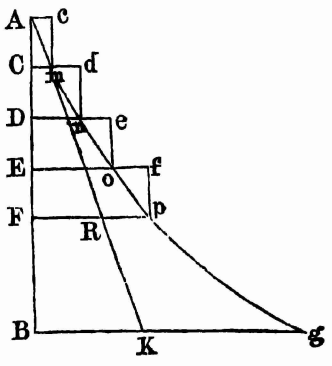
* This mark was intended for a capital sigma.



Let A B represent the time, B g drawn at *rt* $\angle$ *s* to it the velocity, and let A B be divided into equal intervals A C, C D, D E, and E F and C m, D n, E o and F p the velocities generated in those times. Now if the force be supposed to act by impulses, *i. e.* if we suppose the body to move uniformly in the 1st interval and acquire an increase of velocity at the end of it, and if we suppose it to move with that increased velocity during the second interval and so on, the $\square^{ms}$ Cc, Dd, Ee and Ff will represent the spaces described in those times.

$\therefore$ the space described in the time A F : the space described in time A B :: the sum of $\square^{ms}$ in the former case : the sum of the $\square^{ms}$ in the latter. Now if the number of intervals be indefinitely increased and the breadth of each indefinitely diminished; the force which was supposed to act by impulses would approximate to a continued force, and the sum of the $\square^{ms}$ to the curvilinear area B A g as their limits. Now at the point A draw A K tangent to the curve cutting B g in K. Now since the force is finite, $\frac{B\,g}{A\,B}$ which represents the force is finite $\therefore$ $\frac{B\,K}{A\,B}$ which is equal to $\frac{B\,g}{A\,B}$ in the limit is finite.

$\therefore \tan^{-1} \frac{B\,K}{A\,B}$ is finite.

Since the conditions of the 9th lemma are fulfilled.

Area A F p : A B g :: $\overline{A F}^2 : \overline{A B}^2$

But the areas represent the spaces, A F and A B the times $\therefore s \propto \text{time}^2$. Now since the force at any point is measured by the velocity generated in any time divided by that time, supposing the force to remain constant for that time; F at A

$$= \frac{F R}{A F} = \frac{B K}{A B} = \frac{B K . A B}{\overline{A B}^2} = \frac{2 \triangle B A K}{\overline{A B}^2}$$

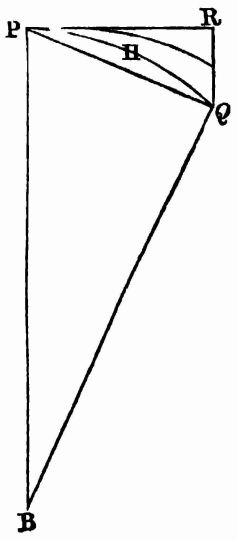
$$= 2 L \frac{B A G}{\overline{A K}^2} = 2 L \frac{S}{T^2}$$

P. VURDA CHARRY.

Q. 4. The diameter of curvature.

$$= \text{limit} \frac{(\text{arc})^2}{\text{subtense } \perp^r \text{ to the tangent}};$$ prove this, and hence find the diameter of curvature at any point of an ellipse.

A. 4. Let P H Q be the circle of curvature, P R the tangent, and P Q the chord. Draw PB and QB $\perp^r$ PR and P Q. By the property of similar triangles.

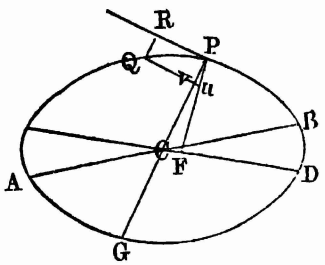


Q R : P Q :: P Q : P B $\therefore$ P B $= \frac{\overline{P Q}^2}{Q R}$. In the limit P B becomes the diameter of curvature and chord $\overline{P Q}^2 = \widehat{P Q}^2$ Diameter of curvature at P

$$= \text{limit} \frac{\overline{P Q}}{Q R}$$

$$= \text{limit} \frac{\text{Arc}^2}{\text{Sub } \perp^r \text{ tangent.}}$$

Let A P B be an ellipse, P any point in it, the diameter of curvature of which is to be determined. Take an arc P Q and draw P R the tangent, Q R the perpendicular subtense,



A B the major axis, C P and C D the conjugate diameters, P F perpendicular to C D and Q u ‖ R P cutting P C in V and P F in u. Produce P C to G. Now diameter of curvature at P

$$= \text{limit } \frac{P\,Q^2}{Q\,R} = \text{limit } \frac{\overline{Q\,u}^2}{P\,u}$$

$$= \text{limit } \frac{Q\,u^2}{P\,V} \cdot \frac{P\,V}{P\,u}$$

$$= \text{limit } \frac{Q\,V^2}{P\,V} \cdot \frac{P\,V}{P\,u}$$

$$= \text{limit } \frac{C\,D^2 . V\,G}{C\,P^2} \cdot \frac{P\,C}{P\,F}.$$

But limit V G = 2 C P.

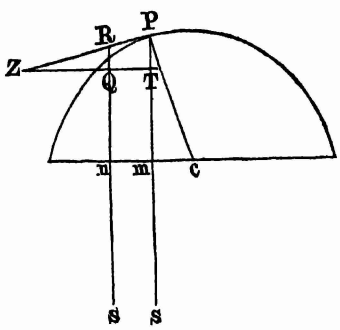
$$\text{diameter of curvature at P} = \frac{C\,D^2}{C\,P^2} \cdot \frac{2\,C\,P . C\,P}{P\,F}$$

$$= \frac{2\,C\,D^2}{P\,F}.$$

T. Mootoosawmy.

Q. 7. Find the law of force by which a body may describe a semi-circle, the centre of force being at an infinite distance.

A. 7. Let P Q be an arc of a semi-circle P R a tangent P, and Q R a subtense $\parallel^l$ to P S and C the centre. From C draw C m $\perp^r$ to P S and produce it both ways to meet the semi-circle. From Q drop



Q T perpendicular upon P M, and produce T Q and P R to meet in Z.

$$\frac{Q\,R(R\,N + Q\,N)}{Q\,T^2} = \frac{R\,P^2}{Q\,T^2} \text{ by Euclid.}$$

$$= \frac{Z\,P^2}{Z\,T^2}$$

$$= \frac{P\,C^2}{P\,M^2} \text{ Similar } \Delta s$$

$$\therefore L\,\frac{Q\,R}{Q\,T^2} = L\,\frac{P\,C^2}{P\,M^2(R\,N + Q\,N)}$$

$$= \frac{P\,C^2}{2\,P\,M^2} \text{ since } L\,R\,N + Q\,N = 2\,P\,M$$

$$\therefore F = \frac{2\,h^2}{S\,P^2}\,L\,\frac{Q\,R}{Q\,T^2}$$

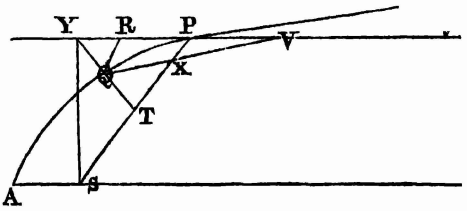
$$= \frac{2\,h^2}{S\,P^2} \times \frac{P\,C^2}{2\,P\,M^2}$$

$$= \mu\,\frac{1}{P\,M^2}$$

V. Rajagopaul.

Q. 9. A body moves in a parabola, find the law of force tending to the focus.

Let P Q be an arc, P R the tangent, Q R the subtense. Draw P V the



diameter, S P, and draw Q X V ||^{l} P R; draw Q T perpendicular to S P, S Y $\perp_{r}$ P R.

$$F = \frac{2h^2}{S P^2} L \frac{Q R}{Q T^2}$$

We must substitute for $L \frac{Q R}{Q T^2}$

$$L \frac{Q R}{Q T^2} = L \frac{P X}{Q T^2} = L \frac{P V}{Q V^2} \times \frac{Q X^2}{Q T^2}$$

since P V = P X by a property of the parabola

$$= \frac{1}{4 S P} \cdot \frac{S P^2}{S Y^2} \text{ since } Q V^2 = 4 S P . P V$$

and $\triangle$ Q X T and S P Y are similar

$$= \frac{S P}{4 S Y^2} = \frac{1}{4 S A}$$

since S P : S Y : : S Y : S A

$$= \frac{1}{L}$$

$$\therefore F = \frac{2h^2}{L} \cdot \frac{1}{S P^2} = \mu \cdot \frac{1}{S P^2}$$

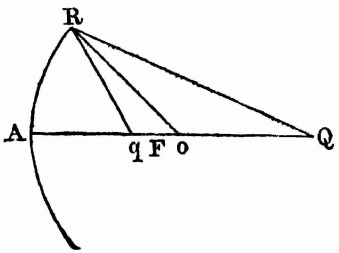
$\therefore$ The force varies inversely as the square of the distance.

P. CHINNATUMBEE

Optics.

Q. 2. Find the geometrical focus of a pencil of rays after direct reflection at a spherical surface, and determine the several positions of the focus for convex and concave surfaces, also when the pencil is divergent, convergent, or consists of parallel rays.

A. 2. Let A R be a spherical surface, A Q its axes, and O its centre. Let Q be a radient, Q A a ray incident at A, then it will be refracted to F which we call the geometrical focus. Let Q R be another ray incident R; join R O, make an angle O R q = to Q R O, let R q cut the axes in q.



Now by the law of reflection

$$\text{Sin I} = \text{Sin R.}$$

that is $\text{Sin Q R O} = \text{Sin O R } q.$

$$\therefore \frac{\text{Sin Q R O}}{\text{Sin R O Q}} = \frac{\text{Sin O R } q}{\text{Sin R O } q.}$$

$$\therefore \frac{\text{Q O}}{\text{R Q}} = \frac{\text{O } q}{\text{R } q}$$

$$\therefore \text{Q O} \times \text{R } q = \text{O } q \times \text{R Q}$$

If R move to A, that is, if we neglect the breadth of the mirror; q will move to F. Q R = Q A, R q = A F.

$$\therefore \text{Q O} \times \text{R F} = \text{O F} \times \text{A Q.}$$

$$\therefore (\text{A Q} - \text{A O})\ \text{A F} = (\text{A O} - \text{A F})\ u$$

$$\therefore (u - r)\ v = (r - v)\ u,$$

supposing A Q = u,

$$A\,F = v, \text{ and } A\,O = r$$

$$\frac{1}{r} - \frac{1}{u} = \frac{1}{v} - \frac{1}{r},$$

dividing both the sides by $u\,v\,r$

$$\therefore \frac{1}{v} + \frac{1}{u} = \frac{2}{r};$$

this formula determines the position of the geometrical focus of a pencil of rays after direct refraction at a spherical surface

When the pencil consists of parallel rays u is infinity, consequently $\frac{1}{u} = 0$

$$\frac{1}{v} = \frac{2}{r}$$

$$v = \frac{r}{2}$$

therefore the focus for parallel rays is at the distance of $\frac{1}{2}$ the radius from the vertex of the mirror.

In a concave mirror, if u be negative $\frac{1}{v} = \frac{2}{r} + \frac{1}{u}$, is positive, the image is therefore formed in front of the mirror. If u be positive and less than $\frac{r}{2}$, $\frac{1}{u} > \frac{2}{r}$ then $\frac{2}{r} - \frac{1}{u}$ is negative, the image is therefore formed behind the mirror; and u greater than $\frac{r}{2}$, that is if $\frac{1}{u} < \frac{2}{r}$, then $\frac{2}{r} - \frac{1}{u}$ will be positive, the image is therefore formed in front of the mirror.

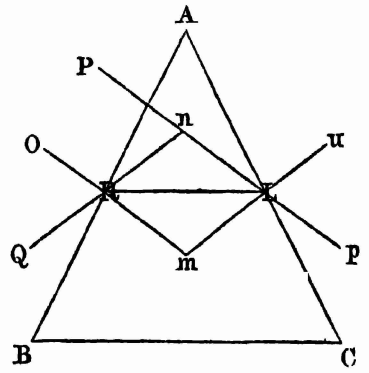
If the mirror be convex, $\frac{1}{v} + \frac{1}{u} = -\frac{2}{r}$; suppose u to be positive then $\frac{1}{v}$ is negative, the image is therefore formed behind the mirror—If u be negative and less than $\frac{r}{2}$, then $\frac{1}{u} < \frac{2}{r}$, therefore

$\frac{1}{v} = \frac{1}{u} - \frac{2}{r}$ is positive; the image is therefore formed in front of the mirror. If u be negative and greater than $\frac{r}{2}$, then $\frac{1}{u} < \frac{2}{r}$, therefore $\frac{1}{u} - \frac{2}{r}$ is negative; the image is therefore formed behind the mirror.

P. CHINNATUMBEE.

Q. 4. Trace the axis of a pencil of rays through a prism, and find its deviation;—its course being in a plane perpendicular to the edge. (*a*) Under what conditions will total reflexion take place?

A. 4. Let A B C be a section of a prism, Q R a ray incident at R. At the point R draw R *m* perpendicular to A B. Since the ray passes from a rarer to a denser medium, it is refracted in the direction R L and touches the second surface at the point L. Draw L *m* perpendicular to A C at the point L and since the refraction is from a denser into a rarer medium, the ray is bent in the direction L *q*. The deviation of the ray owing to refraction at the first surface is the angle *n* R L and that owing to the refraction at the second surface is the angle *n* L R. Therefore the whole deviation or the angle P *n* R is equal to the sum of the partial deviations or the sum of the angles *n* R L and *n* L R.



Let the angle of incidence at the first surface, the angle Q R O $= i_1$ and let the corresponding angle of refraction L R *m* $= r_1$

let $\angle$ R L $m = r_2$ and q L $u = i_2$. Now calling the whole deviation or $\angle$ P n R, D, we have

$$D = n\,R\,L + n\,L\,R.$$

$$= n\,R\,m - m\,R\,L + n\,L\,m - m\,L\,R.$$

$$= O\,R\,Q - m\,R\,L + i\,L\,q - m\,L\,R.$$

$$= i_1 - r_1 + i_2 - r_2 \ldots\ldots\ldots\ldots\ldots (1)$$

$$\text{Sin } i_1 = m \text{ Sin } r_1$$

since the angles are very small we may take the angles instead of their sines.

$$\therefore i_1 = m\,r_1$$

$$r_1 = r_1$$

$$\therefore i_1 - r_1 = m\,r_1 - r_1 = r_1\,(m - 1) \ldots (2)$$

$$\text{Again Sin } i_2 = m \text{ Sin } r_2$$

$$\therefore i_2 = m\,r_2$$

$$\therefore i_2 - r_2 = r_2\,(m - 1) \ldots\ldots\ldots (3)$$

substituting the values of $i_1 - r_1$ and $i_2 - r_2$ in the equation (1) we have

$$D = r_1\,(m - 1) + r_2\,(m - 1) = (m - 1)\,(r_1 + r_2)$$

$$\text{But } r_1 + r_2 = 180 - R\,m\,L = 180 - (180 - A) = A$$

$$\therefore D = (m - 1)\,A$$

In the case of total reflexion, since the ray passes from a denser into a rarer medium, calling r the angle of incidence.

$$\text{Sin } r = m \text{ Sin } i \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Sin r is never to be greater than 1 $\therefore$ m Sin i is never to be greater than 1 $\therefore$ Sin i is never to be greater $\frac{1}{m}$ or else the equation (1) could not be satisfied.

$$\therefore \text{Sin } i = \frac{1}{m} = \frac{1}{\frac{3}{2}} = \frac{2}{3}$$

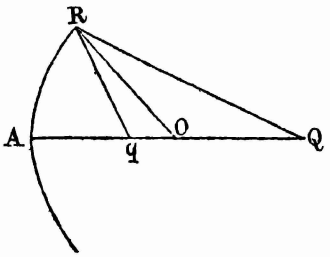
$$\therefore i = 41^{\circ\prime\prime\prime}\ 48^{\prime\prime}$$

In order that total reflection may take place i should be greater than $41^{\circ\prime\prime\prime}\ 48^{\prime\prime}$.

P. VURDACHARRY.

Q. 5. Find the geometrical focus of a pencil after direct refraction through a lens (neglecting its thickness); and hence find an expression for the focal length of a lens.

A. 5. Let A R be the surface of a lens, A Q its axes, A O the radius. Let Q R a ray be incident at R, then it will be refracted to q. Join R O



$$m = \frac{\text{Sin } i}{\text{Sin } r} = \frac{\text{Sin Q R O}}{\text{Sin } q \text{ R O}}$$

$$= \frac{\text{Sin Q R O}}{\text{Sin R O Q}} \cdot \frac{\text{Sin R O } q}{\text{Sin } q \text{ R O}}$$

$$= \frac{\text{Q O}}{\text{R Q}} \cdot \frac{\text{R } q}{q \text{ O}}$$

$$\therefore m \text{ R Q} \cdot q \text{ O} = \text{Q O} \cdot \text{R } q.$$

Neglecting the breadth of the lens, q will coincide with F the geometrical focus, Q R = A Q, R q = A F

$$\therefore m \cdot \text{A Q} \cdot \text{O F} = \text{A } q \cdot \text{Q O}$$

$$\therefore m \text{ A Q } (\text{A F} - \text{A O}) = \text{A F } (\text{A Q} - \text{A O})$$

$$\therefore m (v - r) u = v (u - r)$$

$$\therefore m (u v - u r) = (u v - v r)$$

$$\therefore m\left(\frac{1}{r}-\frac{1}{v}\right)=\frac{1}{r}-\frac{1}{u}$$

$$\therefore \frac{m}{v}-\frac{1}{u}=\frac{m}{r}-\frac{1}{r}$$

$$=(m-1)\frac{1}{r} \quad \ldots\ldots\ldots\ldots\ldots\ldots(a)$$

Let the radius of the second surface be s the image formed by the first lens may be considered as the radiant for the second; consequently v for the first is u for the second, and m becomes $\frac{1}{m}$ because the order of the media are reversed.

$$\therefore \frac{1}{m\,v_1}-\frac{1}{v}=\left(\frac{1}{m}-1\right)\frac{1}{s}$$

$$\therefore \frac{1}{v_1}-\frac{m}{v}=(1-m)\frac{1}{s}$$

$$=-(m-1)\frac{1}{s} \quad \ldots\ldots\ldots\ldots(b)$$

By adding (a) and (b) we have

$$\frac{1}{v_1}-\frac{1}{u}=(m-1)\left(\frac{1}{r}-\frac{1}{s}\right)$$

$$\frac{1}{v_1}-\frac{1}{u}=\frac{1}{f} \text{ for parallel rays}$$

$$\therefore \frac{1}{f}=(m-1)\left(\frac{1}{r}-\frac{1}{s}\right)$$

$$\therefore f=\frac{r\,s}{(s-r\,(m-1)}$$

P. CHINNATUMBEE.

Q. 6. Find the focal lengths of a plano-convex and an equally convex lens (radius four inches in each case) also of an unequally convex lens (radii nine and four inches); the glass having a refractive index of 1 5.

A. 6. $\frac{1}{v \text{ or } F} = (m-1)\left(\frac{1}{r} - \frac{1}{s}\right)$

For plano-convex lens, $r = \infty$ or $\frac{1}{r} = 0$ and we know that $s = 4$ inches and $m = 1.5$.

$$\frac{1}{F} = (1.5-1) \times -\frac{1}{4} = -\frac{1}{2} \cdot \frac{1}{4} = -\frac{1}{8}$$

$\therefore F = -8$ inches

For a convex lens

$$\frac{1}{F} = (m-1) \times -\left(\frac{1}{r} + \frac{1}{s}\right)$$

Since the convexities are equal

$$\frac{1}{F} = (1.5-1) \times -\left(\frac{1}{4} + \frac{1}{4}\right)$$

$$\therefore \frac{1}{F} = \frac{1}{2} \times -\frac{1}{2} = -\frac{1}{4}$$

$\therefore F = -4$ inches

When the convexities are unequal

$$\frac{1}{F} = (1.5-1) \times -\left(\frac{1}{9} + \frac{1}{4}\right)$$

$$= \frac{1}{2} \times -\left(\frac{4+9}{36}\right) = -\frac{13}{72}$$

$$\therefore F = -\frac{72}{13} = 5\frac{7}{13} \text{ inches.}$$

Q. 10. What is chromatic aberration; explain the principle on which it is corrected in telescopes.

A. 10. Chromatic aberration is caused by light not being homogeneous but consisting of different colors. In consequence of this property of light a single white ray instead of giving one focus, gives seven different foci arranged in a line according to the different degrees of the refrangibility of the elements of white light. The possibility of correcting it or as it is called achromatising lenses in telescopes arises from the circumstance of dispersion not being pro-

portional to the deviation. Hence media can be found which have the same dispersions whilst their deviations are different. In order to destroy colour in telescopes we combine different kinds of glass as for example crown glass and flint glass. The principle used in combining lenses is that one by the focal length of the compound glass is equal to the sum of the reciprocals of the focal lengths of the single glasses. To show the condition of Achromatism

$\frac{1}{F} = \frac{1}{f_1} + \frac{1}{f_2}$, where F is the focal length of the compound glass f_1, and f_2 of the single glasses—giving a change Δm to m

$$d\frac{1}{f_1} = \Delta m_1 \frac{1}{r} - \frac{1}{s}$$

$$= \frac{\Delta m_1}{m_1 - 1} \cdot \frac{1}{f} \text{ since } \frac{1}{r} - \frac{1}{s} = \left(\frac{1}{f(m-1)}\right)$$

similarly $d\frac{1}{f_2} = \frac{\Delta m_2}{m_2 - 1} \cdot \frac{1}{f_2}$

$\frac{1}{F}$ remains unchanged

$$\therefore 0 = \frac{\Delta m_1}{m_1 - 1} \cdot \frac{1}{f_1} + \frac{\Delta m_2}{m_2 - 1} \cdot \frac{1}{f_2}$$

writing w_1 and w_2 for the co-efficients of $\frac{1}{f_1}$, and $\frac{1}{f_2}$

we have $0 = \frac{w_1}{f_1} + \frac{w}{f_2}$

$$-\frac{w_1}{f_1} = \frac{w_2}{f_2}$$

$\therefore \frac{w_1}{w_2} = -\frac{f_1}{f_2}$ Therefore to achromatise we take two lenses one concave and the other convex, and whose focal lengths are as their dispersive powers.

V. RAJAGOPAUL.

Q. 11 Describe the eye, and explain the manner in which vision takes place.

A. 11. The human eye consists of two coats, the one external and the other internal. The external coat is called the scleroitic ; next to the external coat, there is a humour called the aqueous humour, and the crystalline lens is situated between this humour and the vitreous. Behind these, is the retina, which is a net-work of thin fibers, that all unite and form one. This holds communication with the brain, but we are ignorant of the mode A pencil of light from external objects is admitted through the pupil, which is a small hole capable of expansion and contraction. This pencil in passing through the two humours and the crystaline is refracted, and the rays in the pencil converge to a point on the retina, and thus an image is formed of one point in the object. Similarly there are points formed on the retina corresponding to points in the object, and thus there is an image formed of the external object.

Q 12. What are the defects of vision; and how may they be remedied ?

A. 12. There are two defects in vision, the short sight and long sight. To a short sighted person, the rays instead of converging to a focus on the retina meet in the front of the retina, they then diverge and form circles on the retina instead of points. The way to correct this defect is by using a lens which will make the rays from the object more divergent and meet at the retina; this is done by a concave lens. To longsighted persons, the rays do not meet at the retina and consequently there are circles instead of points on it. In order to correct this defect, we must use a lens, that will make the rays converge sooner and this is done by a convex lens.

P. Vurda Charry.

Differential Calculus.

(1)

Q. 1. Give the meaning of function, differential, and differential co-efficient. Also explain the object of the Differential Calculus.

A. 1. When one quantity depends upon another, that is when a chang in one produces a change in the other, the former is called a

function of the latter. When a quantity exists in two states and the one may be made to approach the other as near as we please, so that their difference may be made less than any assignable quantity, these differences are called the differentials, and the ratio of the differentials is called the differential co-efficient. The object of the differential Calculus is to determine the relations between finite quantities from those of infinitesimals. The object of common Algebra is to determine the relations of certain finite quantities from the known relations of some other finites, and that of the differential Calculus is to reach the same end, but from the relations of infinitesimal quantities.

P. VURDACHARRY.

Q. 2. Obtain the differential co-efficients of versin x, a^x and $\log e^x$.

A. 2.

$$\text{Versin } x = 1 - \cos x.$$

$$\therefore \frac{d \text{ versin } x}{d x} = - \frac{d \cos x}{d x}$$

$$= - (- \sin x)$$

$$= \text{Sin } x$$

Let x become $x + h$

$$a^{x+h} = a^x \cdot a^h = a^x (1 + A.\, h + \&c.)$$

$$\therefore \frac{d\, a^x}{d x} = \text{A.}\ a^x \text{ the co-efficient of the first power of } h.$$

Let $y = \log e^x$, then $e^y = x$

By differentiation $e^y \frac{d y}{d x} = 1$

Since the modulus for the base e is unity.

$$\therefore \frac{d y}{d x} = \frac{1}{e^y}$$

$$\therefore \frac{d \log_e x}{d x} = \frac{1}{x}$$

Q. 4. Prove Taylor's Theorem ; and obtain McLaurin's from it. Apply the latter to get a series for sin x.

A. 4. Let x receive an increment h. We may assume $f(x+h) = fx + A h^a + B h^b + C h^c + \&c.$

Since when $h = o$, $f(x+h)$ becomes fx.

Here A B &c. do not contain h and a, b are all positive, for if they are negative $f(x+h)$ will be infinity.

Differentiating this series with regard to h we have

$$\frac{df(x \times h)}{dh} = a\,A\,h^{a-1} + b\,B\,h^{b-1} + c\,C\,h^{c-1} \quad (1)$$

$$\frac{df(x+h)}{dx} = \frac{dfx}{dx} + \frac{dA}{dx} \cdot h^a + \frac{dB}{dx} \cdot h^b + \&c. \quad (2)$$

But (1) = (2) since $\frac{df(x+h)}{dh} = \frac{df(x+h)}{dx}$

Equating the terms in (1) and (2) in order, we have

$$a - 1 = o\,;\ \therefore a = 1$$

$$b - 1 = a = 1\,;\ \therefore b = 2$$

$$c - 1 = b = 2\,;\ \therefore c = 3$$

$$a\,A = \frac{dfx}{dx}\,;\ \therefore A = \frac{dfx}{dx}$$

$$b\,B = \frac{dA}{dx} = \frac{d^2fx}{dx^2}\,;\ \therefore B = \frac{d^2fx}{dx^2} \cdot \frac{1}{1 \cdot 2}$$

$$c\,C = \frac{dB}{dx} = \frac{d^3fx}{dx^3}\,;\ \therefore C = \frac{d^3fx}{dx^3} \cdot \frac{1}{1 \cdot 2 \cdot 3}$$

$$\therefore f(x+h) = fx + \frac{dfx}{dx} \cdot h + \frac{d^2fx}{dx^2} \cdot \frac{h^2}{1 \cdot 2} + \frac{d^3fx}{dx^3} \cdot \frac{h^3}{1 \cdot 2 \cdot 3}$$

This is Taylor's Theorem.

In the above formula let x become 0

$$\therefore fh = \underset{x=0}{fx} + \underset{x=0}{\frac{dfx}{dx}} \cdot h + \underset{x=0}{\frac{d^2fx}{dx^2}} \cdot \frac{h_2}{1 \cdot 2} + \&c.$$

$$\therefore fx = \underset{x=o}{fx} + \underset{x=o}{\frac{df x}{dx}} \cdot x + \underset{x=o}{\frac{d^2 fx}{dx^2}} \cdot \frac{x^2}{1\,2} + \&c.$$

Let $fx = \text{Sin } x$

$$\therefore \text{Sin } x = \underset{x=o}{\text{Sin } x} + \underset{x=o}{\frac{d \text{ Sin } x}{dx}} \cdot x + \underset{x=o}{\frac{d^2 \text{Sin } x}{dx^2}} \cdot \frac{x^2}{1\,2} + \underset{x=o}{\frac{d^3 \text{ Sin } x}{dx^3}}$$

$$\frac{x^3}{1 \cdot 2 \cdot 3} + \&c.$$

Now Sin x (when $x = o$) equals o

$$\frac{d \text{ Sin } x}{dx} = \text{Cos } x, \text{ \& Cos } x = 1, \text{ when } x = o$$

$$\therefore \underset{x=o}{\frac{d \text{ Sin } x}{dx}} = 1$$

$$\frac{d^2 \text{ Sin } x}{dx^2} = \frac{d \text{ Cos } x}{dx} = -\text{ Sin } x = o \text{ when } x = o$$

$$\frac{d^3 \text{ Sin } x}{dx^3} = \frac{d \text{ Sin } x}{dx} = -\text{ Cos } x = -1 \text{ when } x = o$$

$$\frac{d^4 \text{ Sin } x}{dx^4} = -\frac{d \text{ Cos } x}{dx} = \text{Sin } x = o \text{ when } x = o$$

$$\frac{d^5 \text{ Sin } x}{dx^5} = \frac{d \text{ Sin } x}{dx} = \text{Cos } x = 1 \text{ when } x = o$$

Therefore all the odd terms in the expansions are o

$$\therefore \text{Sin } x = x \ldots \frac{x^3}{1\,2 \cdot 3} + \frac{x^5}{1 \cdot 2 \cdot 3 \cdot 4 \cdot 5} - \frac{x^7}{1 \cdot 2\,3 \cdot 4\,5 \cdot 6\,7} + \&c.$$

Q. 5. The refraction of the moon being taken at 58. $''\tan z$ and her parallax at $59' \sin z$, find the moon's zenith distance when the total effect of refraction and parallax is a maximum, and also the amount of that effect.

***A.* 5.** The refraction of the moon is taken at $58'' \tan z$ and the parallax is taken at $59' \sin z$.

$-59' \sin z + 58'' \tan z$ is the total effect, the effect of each being in the opposite direction.

$$-59' \cos z + 58'' \sec^2 z = 0 \text{ for maximum}$$

$$\therefore 59' \cos z = 58''. \frac{1}{\cos^2 z}$$

$$\therefore \cos^3 z = \frac{58''}{59 \times 60''}$$

$$= \frac{58}{3540}$$

$$= .016384$$

$$\therefore \cos z = .251 \text{ nearly}$$

$$\therefore z = 75°, 27'$$

Therefore the moon's zenith distance when the total effect of refraction and parallax is maximum is 75°, 27′.

$\sin z = .968$; $59' \sin z = .968 \times 3540'' = 3426{\cdot}720$

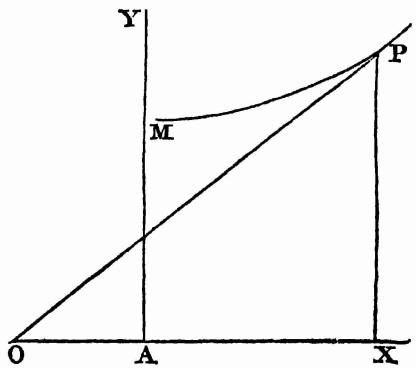
$\tan z = 3{\cdot}853$; $58 \tan z = 3{\cdot}853 \times 58 = 223{\cdot}474$

The total amount is $3426{\cdot}720'' - 223{\cdot}474'' = 3203{\cdot}246''$

$= 53{\cdot}4'$

Q. 10. Find an expression for the subtangent in terms of differentials, and apply it to obtain that line in a circle, a parabola, and an ellipse.

A. 10. Let A X, A Y be a rectangular axes, P M a curve, P X the ordinate from P, and P O a tangent to the curve at the point P cut X A produced in O;



then the line O X intercepted between O and X is the subtangent.

$$\frac{O\,X}{X\,P} = \frac{1}{\tan P\,O\,X} = \frac{1}{\frac{d\,y}{d\,x}}$$

$$\therefore O\,X = \frac{X\,P}{\frac{d\,y}{d\,x}} = \frac{Y}{\frac{d\,y}{d\,x}}$$

(1) The equation to a parabola is $y^2 = 4\,m\,x$

$$\therefore y = 2\sqrt{m}\,x^{\frac{1}{2}}$$

$$\therefore \frac{d\,y}{d\,x} = 2\sqrt{m}.\,\frac{1}{2}\,x^{-\frac{1}{2}} \quad \ldots\ldots\ldots\ldots (1)$$

$$y = 2\sqrt{m}\,x^{\frac{1}{2}} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Dividing the second equation by the first we get,

$$\frac{y}{\frac{d\,y}{d\,x}} = \frac{2\sqrt{m}\,x^{\frac{1}{2}}}{2\sqrt{m}\,\frac{1}{2}\,x^{-\frac{1}{2}}}$$

$$= \frac{x^{\frac{1}{2}}}{\frac{1}{2}\,x^{-\frac{1}{2}}}$$

$$= \frac{x^{\frac{1}{2}}}{\frac{1}{2\,x^{\frac{1}{2}}}}$$

$$= 2\,x^{\frac{1}{2}} \times x^{\frac{1}{2}} = 2\,x$$

the subtangent for a parabola is equal to twice the abcissa.

(2) The equation to a circle is

$$y^2 + x^2 = r^2$$

$$\therefore 2\,y\,\frac{d\,y}{d\,x} + 2\,x = o$$

$$\therefore y \frac{dy}{dx} = -x$$

$$\therefore \frac{dy}{dx} = -\frac{x}{y}$$

and $y = \pm \sqrt{r^2 - x^2}$

$$\therefore \frac{\frac{y}{dy}}{\frac{dx}{}} = \frac{\pm \sqrt{r^2 - x^2}}{-\frac{x}{y}} = \frac{\pm y \sqrt{r^2 - x^2}}{x}$$

(3.) The equation to an ellipse reckoning from the centre is

$$y^2 = \frac{b^2}{a^2}(a^2 - x^2)$$

$$\therefore 2y \frac{dy}{dx} = -2x \frac{b^2}{a^2}$$

$$\therefore \frac{dy}{dx} = \ldots \frac{2x \frac{b^2}{a^2}}{2 \cdot y} = -\frac{x}{y} \frac{b^2}{a^2}$$

and $y = \frac{b}{a} \sqrt{a^2 - x^2}$

$$\therefore \frac{\frac{y}{dy}}{\frac{dx}{}} = \frac{\frac{b}{a} \sqrt{a^2 - x^2}}{-\frac{b^2}{a^2} \cdot \frac{x}{y}}$$

$$= -\frac{b}{a} \cdot \frac{a^2}{b^2} \cdot \frac{y}{x} \sqrt{a^2 - x^2}$$

$$= -\frac{y}{x} \cdot \frac{a}{b} \sqrt{a^2 - x^2}$$

P. Vurda Charry.

APPENDIX D.

THE ORDER OF PROVIDENCE IS SUCH THAT NATIONAL VICES INVARIABLY BRING ABOUT THEIR OWN PUNISHMENT.

The study of nature is indeed very interesting. To understand the laws of nature, to trace their connexions and tendencies, to reason to the effects that flow from them and to contemplate upon the important purposes they are destined to fulfil by divine wisdom, must be an inexhaustible fountain of interest to every well regulated mind. When the study of external nature, when the world without us is the subject of interesting study, the moral world and the principles of its government must be a still more interesting theme of our contemplation. The laws of nature concern objects that are around us; while those of human nature concern ourselves. A knowledge of the latter is more favorable to our happiness than a knowledge of the former. Without the one we could afford to thrive, while without the other we could not very well rise in prosperity. We could afford to be ignorant without materially injuring our happiness that the planets move around the sun and that forces balance each other when inversely as their arms; but we could not be happy if we were not aware that virtue is to be rewarded and vice to be punished; and that selfishness ought to be shunned and benevolence ought to be cultivated. So great is the importance of a principle of our nature applicable either to our political moral or religious life. But when the principle in question is applicable to the political, moral and religious life of man, and to every phase of his existence, its importance, I believe, can seldom be overrated. Of this description is the principle that it is an order of Providence that national vices invariably bring about their own punishment.

That national vices invariably bring about their own punishment is a fact whose truth cannot at all be disputed. The experience of

2000 years has proved the truth of this principle almost to perfect conviction. From the fall of Greece down to the latest historical event, we met with a host of instances corroborative of it. In Greece the licentious spirit of democracy was the cause of its punishment. In Rome the unrestrained licentiousness of the empire was the instrument of its destruction. In modern Europe the debasement of the Christian religion and its prostitution to the base purposes of priestcraft brought about the downfal of the papal power. So whatever political vice we take we invariably find it to be the instrument of its own punishment.

This principle is not only borne out by history, but there are also several reasons to lead us to believe that it cannot be otherwise. Every individual vice is the instrument of its own punishment. Both moralists and philosophers have repeatedly borne testimony to its truth. That virtue is its own reward and vice its own punishment have been all along the boast of the one and the dread of the other. Since a nation is simply an aggregate of individuals and whatever is true of the one is generally true of the other, it is highly probable that a national vice like an individual vice is the instrument of its own punishment.

The invariable punishment of national vices is necessary as a safeguard of national morality. Without it vice would be encouraged and virtue would be degraded. Lying, murder, treachery and almost every vice that has a name would be practised with impunity in some one or other part of the world. An individual vice may be punished by the law of the land. A robber, an adulterer and a murderer meet with punishment from the more virtuous portion of the community. The law of the land in many cases restrains the out-burstings of individual vices, but this is not at all the case with national vices. When there is a nation of vicious men, when every individual in a society participates in a particular vice, who is to punish the culprit? In a society of robbers, who could have the honest boldness to come forward and denounce or punish acts of robbery? As law is the image and not the mould of national character, it can impose no punishment upon national as upon individual vices. If the provident wisdom of God would not leave even an individual vice without punishment when it could have foreseen that it would be punished by the law of

the land, is it not highly probable that every national vice would be made the instrument of its own punishment when it could have foreseen that no human institution could lay any restraint upon it?

On further consideration, it is not only highly probable but almost certain that national vices are the means of their own punishment. Perfection has been almost universally alleged to be the characteristic feature of the plan of Providence. It is as perfect as a plan can ever be, and every provision necessary for the progressive movement of the world is already made. Not only the different elements of the moral system admirably harmonize with one another, but they are furnished with the means of rectifying themselves whenever they are out of order. In a word the plan is so perfect that any fancied improvement upon it would only tend to make it imperfect. Admitting this it is obvious that national vices must be the instrument of their own punishment. The principle before us is essentially necessary for the perfection of the plan of Providence. Without it vice would lead men away from the path of virtue and go on increasing unchecked probably till the world should come to an end. While on the contrary, in virtue of it, an irrepressibly elastic force is lodged in the better principles of our nature. Every advancement of national vice serves only to increase the elasticity of virtue or the rigor of its own punishment. When the vice is developed to a dangerous extent, the virtuous principles repel the vicious and, conquering them, restore the disturbed harmony of the system. Thus we see that both reason and history go to prove that national vices invariably bring about their own punishment. However, this is not sufficient to show that it is an order of Providence. Something more is necessary. We have to show not only that nations have fallen on account of their vices, but fallen in a way which bears the impress of a law of nature. I shall therefore now proceed to show that there is a strikingly perfect resemblance between the operation of this principle and that of any law of the material world and deduce from analogical reasoning that it is an order of Providence or a law of the moral world.

First the operation of this principle is slow and gradual. True it is that national vices have invariably brought about their punishment. But the punishment has not been brought on all on a

sudden. Centuries elapse before the evil consequences that flow from a national vice swell to a sensible magnitude. The evils of national vices are not developed to the fullest extent in the course of a day or two. On each occasion some evil is produced, and the evil, though for a year or two almost inappreciable, gradually accumulates and at last presents itself in a formidable shape. The evil principles which ultimately proved fatal to the Roman Empire were at work so early as the age of Augustus. Yet the age of Augustus is considered to have been the golden age of Rome; not because that there were then no evil consequences but because the evil consequences were almost inappreciable. They did not begin to tell seriously against the strength and security of the empire before the commencement of the fourth century. Thus four hundred years elapsed before the evils of the Roman vices were developed to a frightful extent. But we know that the operation of all the laws of nature is gradual and slow. To take a familiar example, we see plenty of showers falling from the clouds during the wintry season; and yet how slow is the operation of the principles which lead to the fall of rain. As early as summer evaporation commences; vapours gradually accumulate in the atmosphere and many days elapse before the attraction of cohesion forms them into a cloud. Then they begin to descend upon the earth by their weight in the shape of rain. The operation of the principle that national vices invariably bring about their own punishment is precisely similar to the operation of the principles that lead to the fall of rain; and hence we have a right to infer cœteris paribus that it is an order of Providence or a law of human nature.

While the operation of this principle is slow and gradual, it is steady and universal. It is independent of time or place. In every age and in every country national vices have invariably brought about their own punishment. From the period of Hindoo civilization down to the time of the French Revolution we meet with no instances of the unsteady operation of this principle. In the case of moral sentiments what was virtue in one age is considered to be vice in another and what was vice in the one is taken for virtue in the other. Robbery and falsehood were considered to be no crime among the people of Sparta; and the promiscuous commerce of the sexes is unscrupulously indulged in by many of the barbarous

inhabitants of Africa and America. Infanticide and suttee were considered to be the highest effusion of piety and love so recently as the commencement of the 19th century. Hence there is reason for a difference of opinion as to the origin of moral sentiments. But the case is quite different with the principle that national vices invariably bring about their own punishment. What we know to be a national vice has always been, the instrument of its punishment. The vices of the Italian republics, the oppression of the feudal system, and the enormous corruptions of France about the reign of Louis XV. each and every one of them were attended with disastrous consequences. This principle looks very much like the steady hand and indelible character of nature; and leads us to believe that it is a law of human nature or an order of Providence.

The principle that national vices being about their own punishment is productive of consequences beneficial to society at large. A nation that at one time stands at the pinnacle of wisdom and happiness is sometimes reduced by national vice to the abyss of ignorance and misery. A country which at one time gives law to the world and directs the destinies of mankind is brought by national vices under the painful necessity of receiving law from a more virtuous portion of the human race. So far it is a source of evil consequences to the nation that are debased by vices. But these evils are partial, leading ultimately to consequences highly favorable to the happiness of society at large. When a national vice of serious character reaches its culmination point, it brings about the fall of the nation tainted with vices and subjects them to a more virtuous portion of our fellow-creatures. Virtue is thus brought into contact with vice, and the conquering race infuses vigor into the conquered. Hence national vice is checked, the regeneration of mankind is accomplished and universal good is educed from partial evils. This is exactly analagous to the operation of the laws of the material world. Noxious vapors continually accumulate and poison the atmosphere around us. When the bane gradually increasing becomes at last sufficient to endanger human existence, a tremendous storm arises and after the destruction of many valuable lives and properties, restores the atmosphere to its pristine purity. In the same way national vices continually poison the moral and politi-

cal atmosphere of the world; and when they become sufficiently alarming to endanger human happiness a tremendous revolution arises, and after raging with violence for some time to the immediate injury of the nation debased by vices, restores the purity of the political and moral atmosphere.

Thus the principle that national vices invariably bring about their own punishment bears the characteristic features of a law of nature; its operation being slow, gradual, steady and beneficial.

Here it may not be considered irrelevant to take notice of an objection that may be advanced against the steady and universal operation of this principle. It may be urged that slave trade is an indelible stain upon the character of the American nation; and that the cruelty which they perpetrate is of the most heinous character. All the ties of patriotism of filial or parental duty and of conjugal affection are cut asunder by the violent hand of the slave master. Every duty that belongs to man as a moral agent, every useful or amiable feeling which he inherits from nature, and every right which belongs to him as a member of human society, are forced to be surrendered to the capricious will and tyranny of the slave master. The cruelty of a slave master surpasses that of a Nero or of a Domitian. The oppression of a despot is principally physical, while that of a slave master is both physical and moral, as perfect as oppression can ever be. Though such a piece of monstrous injustice is unscrupulously indulged in by 17 millions of civilized beings, yet it may be said they rank as one of the happiest and most powerful nations on the globe, and the order of providence visits them with no adequate punishment. Does this prove, it may be said, that national vices invariably bring about their punishment. Does this go to establish that a nation like an individual is punished in this world for their vices? True it is that the Americans in spite of their iniquitous slave trade rank as one of the happiest and most powerful nations on the earth. But hence it does not follow that they meet with no adequate punishment for their vices—inasmuch as they are properly and sufficiently punished for their indulgence in slave trade. In the material world attraction is reciprocal, so in the moral world action is reciprocal. The

slave acts upon the master; and the master acts upon the slave. There is always a certain interchange of principles and sentiments between the master and the servant or between any two persons that live with one another. When the moral and intellectual culture of the one is neglected, their vicious principles gradually poison those of the other. How repeatedly has the moral depravity of the lower orders brought along with it a laxity of the morals of the higher order. So in America the evils arising from the mental and moral oppression of the slave must produce a corresponding though slight impression upon the nation at large.

The material happiness of the nation is also diminished. As long as slavery exists in America fear and not self-love must be the mainspring of slave labor. The slave labors not from the ardent and delightful hope of bettering his circumstances, but from a desire of evading the punishment of his master. As long as the eye of the master is upon him, he puts on an appearance of business. The moment the master ceases to watch him, his work is gladly neglected. On the whole in consequence less is produced and that too of an inferior equality. Thus the master suffers both in his moral and material condition for his indulgence in slave-trade, and the order of Providence inflicts upon him the very punishment which he inflicts upon the slave.

It is now manifest that national vices bring about their own punishment in a way which bears the impress of a law of nature is a truth which cannot at all be called in question. There are three kinds of national vices, viz., political, moral and religious. What has been said is applicable to every class of them. Whether it be a political vice like the licentious spirit of the Grecian democracy or a moral vice like the enervating luxury of the Roman empire or a religious vice as in the case of the Romish hierarchy, it has invariably been the instrument of its own punishment. I shall now take a historical event which was manifestly a punishment for national vices and attempting to analyze it, verify the remarks already made by a reference to history.

The French revolution was one of the most important events which were manifestly a nurishment for national vices

The French Revolution was a punishment not for a single national vice but for a host of national vices. The most important of them are oppressive despotism, extreme licentiousness and debased religion. In order to render myself clear, I shall give an account of the state of France at a little before the commencement of the great Revolution. The people of France were subjected to a tyranny of the most galling description. Both the monarch and the nobles were the licensed oppressors of the nation The people were most heavily taxed while the nobility were exempted from almost all burden of taxation. All the offices of honor and emolument were rendered inaccessible to merit and talent They were thrown open only to those who could produce a passport of interest or pedigree. Justice was at this time ill administered in the country of France. It was openly sold, innocence was often punished and crime was not unfrequently allowed to escape with unblushing audacity. Independence of thought, soundness of judgment and uprightness of character seldom graced the courts of France. The bench was occupied by illiterate, arrogant and dishonest noblemen. In short the ermine of judges the pomp and parade of court and all the paraphermalia of justice were about this time a solemn mockery in the country of France. The feudal superior joined his oppression to that of the sovereign. He often sported with the happiness and property of his vassal. An English traveller says that droves of wild boars were allowed to destroy the crops of the peasant unmolested; and that the use of a particular manure was forbidden on account of the consequent unpleasantness of the flavor of the game. To the general oppression let us add the licentious profligacy of the court. The sovereign was sunk into the utmost depths of profligacy. Nether justice nor virtue succeeded in imposing a salutary restraint upon his morals. He surrendered himself to the dominion of two of the most infamous women of the times and neglected the onerous and useful duties of a sovereign for the enervating enjoyments of a sensualist. The looseness of morals spread from the court to the people and lowered the standard of public morality. Moreover the religion of France was a repository of corruption. The absurd ceremonies and dangerous doctrines of catholicism continued to debase the popular mind. "She says an able writer, could explain nothing,

soften nothing and renounce nothing with the assertion of her infallibility. The Clergy were men of loose morals and often presented themselves in Church on Sundays with their guns. The corruption of France was at this time so complete and general that the government, the morals and religion of the people equally participated in the contagion. The Revolution inflicted punishment upon every one of the vices which led to it. The tyranny of the sovereign was punished by the abolition of monarchy, the oppression of the nobility by the destruction of that order; and catholic superstition was punished in the paroxysm of revolutionary feeling, by the open renunciation of christianity and the plundering of churches and other holy edifices. Thus all the vices which caused the Revolution brought about their own punishment in the Revolution. The Revolution was not brought about all on a sudden. The elements of destruction were gradually gathering round for years and at last burst forth upon the sight of mankind in the year 1789. Nearly 40 years before the revolution Lord Chesterfield foresaw it and recorded his opinion in a letter. It's operation was like that of a volcano in which chemical processes perpetually go on under the earth for a long time unheeded by inattentive observers till they break open upon the view of men in streams of lava and in the smokes of destructive conflagration.

I have endeavoured to show that national vices have been invariably the instrument of their own punishment and to verify my remarks by a reference to history The necessity of this principle as a safeguard of national morality, the slowness and steadiness of its operation,the beneficial consequences that flow from it, and its admirable adaptation for the progress of man, all bespeak forethought and design and bring home to us the conviction that "It is an order of providence that national vices invariably bring about their own punishment."

T. Mootoosawmy.

High School,
20*th March* 1854.

APPENDIX E.

Report on Tamil.

To

The Secretary to the
University Board.

Sir,

In accordance with the instructions conveyed to me in Extract Minutes of Consultation 3d December 1853, I assisted at the Tamil Examination of the boys at the High School on the 13th December 1853.

2. The very large increase of numbers since last examination, the greater part of whom were merely beginners, rendered it impossible for me to examine every class. I had the Junior Classes up for a short time, and then at Mr. Powell's suggestion, handed them over to Mr. S. Joyes, a Master at Bishop Corrie's Grammar School, whose aid had been invited I believe by Mr. Powell. Mr. Joyes having been accustomed to tuition and a good Tamil Scholar, his report herein enclosed, may be relied upon.

3. The upper Classes I examined myself in the following Books.

Nunnool (Grammar.)
Curul (Poetry.)
Vakoondam (Poetry.)
Discovery of America (Prose.)

This examination which lasted several hours enables me to state that what had been learnt, had been learnt well, and that there was an improvement in the replies to questions of a nature rather differing from that to which the boys are accustomed. It appeared to me that not quite so high a standard had been at-

tained as I remarked in some of the elder students last year; but I am informed that most of these have been withdrawn to pursue other avocations; and it is perhaps hardly necessary to remark that a progressive improvement in the maximum range of acquirement, year by year, cannot be expected, inasmuch as those who are in the first position at one examination do not remain in the High School, and their place is just supplied and no more, by those who ranked below them.

4. I would mention that the class examined in the Tamil translation of the "Discovery of America" did very well, and I am convinced that if works of this kind were multiplied, it would be highly beneficial. Boys who naturally take no interest in the sententious and dogmatic propositions of poetical works, however elegant the style, may well leave them to be studied at a later period, and in the mean time acquire a useful knowledge of Tamil by reading smaller works of a nature to excite their interest and to afford real information. I think I may say that no prose works exist in Tamil that meet the above requirements; they are generally silly, or at least uninstructive Tales and Fables, answering well enough for European learners, of more mature years, whose object is to obtain the common idiom of the language and not to obtain information from Tamil books, but they are not suited to instruct the youthful native. The book I have above alluded to is short, in good idiomatic Tamil, not a stiff translation of Robertson but more a paraphrase, though keeping to *facts* and is a good model. It is a *narrative* style that is required, not a mere History in Tamil, which would not answer the purpose at all The boys must have something to *interest* as well as instruct.

5. There was also a *written* examination. The English paper given to the upper Division was an extract from Adam Smith's Wealth of Nations, on the subject of Government interference with the Corn trade. The papers do not exhibit any great merit, and I doubt if the subject was fully understood; especially the distinction between a "famine" and a "dearth," on which A. Smith particularly dwells. The names in the margin show the rank taken in this paper; the Tamil composition is very fair.

1. Rajah Gopaul,
2. Mootoosawmy,
3. T. Rungasawmy,
4. Armoogum

1. T. Mootoosamy,
2. Rajah Gopaul,
3. Rungasawmy,
4 Armoogum.

6. The Tamil paper was from the "Ramayanam." The translations into English were nearly correct. The rank is given in the margin.

7. I gave no "Essay" this year, as I doubted if it would produce any thing very satisfactory.

8. I also gave an English and a Tamil paper to the lower division, and the translations were on the whole respectable.

9. I would notice with regard to the lower division that an improvement has taken place in regard to the Grammar. Formerly no less than three were in use, and none of them quite suitable. During the last year, the Head Tamil Master, Vizaga Peroomal Iyer has prepared a small Grammar which will answer the purpose. There are, it is true, a few details which I think might have been omitted, but it is a very correct compendium of the Nunnool, and more explanatory on points of real importance. As long as the Nunnool remains the standard Grammar, and I see no prospect of its being superseded at present, this compendium only should be used as preparatory to it.

I have the honor to be, &c.,

(Signed) W. H. BAYLEY,

Tamil Translator to Govt.

Report on Telugu.

FORT ST. GEORGE, 22*d December* 1853.

To

The Secretary to the

University Board.

SIR,

I have the honor to report the result of my examination of the Telugu Classes in the University.

2. The vivâ voce examination was held on the 20th Instant, the written translations were performed on the following day.

3. In the vivâ voce part of the examination the boys were generally successful and the manner in which they acquitted themselves, showed that their tutors had taken great pains in instructing them. I was particularly struck with the progress which the Upper Classes of the Primary school had made in the languages—comparatively speaking, they passed a better examination than the higher classes. I am confident that if the instruction prescribed for these junior classes is carefully restricted to the dialect in ordinary use, this branch of the Institution will prove of very great practical utility.

4. The written examination consisted of an English tale to be translated into Telugu and an ordinary urzee to be rendered in English. This department consisted of only seven youths, whom I have classed in the margin. The translations are creditably performed, but none of them merit particular mention. I would strongly recommend the formation of a class to translate both verbally and in writing from Telugu into English and vice versâ.

	From Telugu into English.	*From English into Telugu.*
P. Vurdacharry.....	1	1
B. Gopauliah.....	2	5
P. Chinatumbee.....	3	4
D. Parthasarady.....	4	6
P. Venkatakistnama..	5	3
C. Vanoogopaul.....	6	7
C. Vencataputty.....	7	2

5. I would also beg to suggest the early preparation of a more useful set of books than those now in the hands of the Students. The introduction of good translations of English works from which the boys while learning Telugu might also acquire other useful knowledge, would probably enable the Principal to allot more* time than is now allowed for the study of the languages.

Senior Classes 1 hour daily.
Primary do. 2 hours.

6. The written exercises are herewith returned.

I have the honor to be, &c.,
(Signed) J. D. Sim,
Actg. Telugu Transr. to Govt.

Report on Mahratta.

From

MAJOR J. J. LOSH,
Mahratta Translator to Government.

To

A. J. ARBUTHNOT, ESQ.
Secretary to the Madras University.

SIR,

1. For the information of the Governors of the Madras University, I have the honor to submit the following report on the examination of the Mahratta Classes at the High School, which, in obedience to the orders of Government, I conducted on the 20th ultimo.

2. The examination occupied from 1 to 5½ o'clock P. M. on the abovementioned day, in which time I was able to give each of the Students present an opportunity of showing the extent of his acquirements in the subjects which had been selected and fixed for the purpose, according to the printed notice.

3. Although the performances of the students were, on the whole, not at all better than at former examination, which I have superintended, it can hardly be said that no progress has been made since the last, inasmuch as, with a few exceptions, the present Mahratta Scholars seemed to me to be altogether new, and a great many of them are obviously mere beginners.

4. They were examined by Classes as follows.

I.

The 4th, or Highest Class, containing 8 Students, all of whom were present, and undertook to make written translations from English into Mahratta and vice versâ, in addition to their vivâ voce examination in the selected portions of the books read during the year.

II.

The 3d Class containing 7 Students, who were all present.

III.

The 2d Class containing 6 Student, all present.

IV

The 1st Class containing 10 Students, of whom several were absent.

V.

Primary School 2d, or Highest Class, containing 12 Students, all present.

VI.

Primary School 1st or Lowest Class containing 13 Students of whom all were present except two.

5. The progress made perhaps may be termed satisfactory, but there did not appear amongst the Students a single one who has attained any very great proficiency.

6. By far the most satisfactory part of the examination was the writing (not translation or writing from dictation) which though not in the regular course of the examination many of the students of different classes undertook, and without a single exception, performed very well. The hand-writing was quite legible, and therefore good; and the meaning clearly expressed.

7. The written translations of the Students of the 4th Class, which are enclosed,* abound in errors of various kinds, and not one of them can be fairly termed good.

8 English.
8 Mahratta.

8. There is no very marked superiority of any one Student over his Class-fellows, but, as perhaps it is necessary that the best should be mentioned, I think Balajee Row whose name stands second in the 4th Class may be considered as entitled to the highest place.

9. I was surprised to observe that Mahratta Students who were stated to be in some of the higher English Classes, and

whose knowledge of English was evidently very good, did not appear to be able to turn their knowledge to account in explaining the meaning of Mahratta sentences, or answering questions respecting Grammar; and, also, that the boys belonging to the Probationary* Classes, were on the whole, quite equal to those of the same standing in the other Classes.

By this term are to be understood the classes belonging to the Primary School.

10. In excuse for errors and deficiencies several representations were made of the want of time and opportunity for the study of Mahratta; and it certainly appears that a single master can hardly be sufficient for the effective superintendence and instruction of so many pupils, and that considerable advantage might be anticipated from his being allowed an Assistant.

I have, &c.
(Signed) J. J. Losh,
Mahratta Translator to Government.

Madras,
16*th January* 1854.

To

A. J. Arbuthnot, Esq.
Secretary Madras University.

Sir,

I have the honor to inform you that, at the request of the Right Honorable the Governor, I took part in the late Public Examination of the Madras University. The part assigned to me, was to examine the third class of the College Department on *Optics* and the *First three Sections of Newton's Principia*, and I have great pleasure in expressing a highly favorable opinion of the result. The Students have for the most part evinced an accurate knowledge of the principles of Optical Science, and the power of verifying its results by rigorous mathematical demonstration. Their papers also show an equally sound knowledge of that portion of Newton's Principia, to which their studies have been directed.

I also examined orally the 5th Class of the School Department in the first six books of Euclid, and am thereby enabled to report favorably of their progress.

I venture to record my opinion, founded on this and previous examinations, that the Mathematical branch of education in the Madras University, is conducted on the soundest principles.

I have the honor to be,
Sir,
Your most obedient Servant,
(Signed) JOHN RICHARDS, M. A.,

ST. THOMAS' MOUNT,
10*th March* 1854.

To

A. J. ARBUTHNOT, ESQ.,
Secretary to the Madras University.

SIR,

I have the honor to submit the following remarks upon so much of the late examination of the Madras University as was conducted by me under the orders of Government.

I examined the four young men who compose the Senior College Class in the Merchant of Venice. They have all shown great knowledge of Shakspeare's language and a power of expressing themselves in English most creditable to them. I proposed several questions calculated to elicit independent thought, and the answers given to these by T. Mootoosawmy have afforded me great gratification.

The questions set by me in English Literature were much easier. The answers are distinguished by great correctness and frequently elegance of expression.

I have also scrutinized the answers given by the same class, to a paper on Guizot's civilization in Europe, set by another examiner. My paper of marks will show that the result is most satisfactory. It is at the same time fair to state that in reference to the character of the book, the paper was an easy one.

The first College class was examined by me in Modern History, and the 5th Class in the High School in English History. While not dissatisfied with the result, I am of opinion that greater accuracy of information and definiteness of view may be fairly demanded in this branch of study.

I have the honor to be,
Sir,
Your most obedient Servant,
(Signed) W. Holloway.

APPENDIX F

CUDDALORE,
4th February, 1854.

From

G. S FORBES, ESQ
Secretary to the Committee of the Government Provincial School Cuddalore.

To

A. J. ARBUTHNOT, ESQ.
Secretary to the Madras University.

SIR,

Although the Government School at this station has only been in operation since the 1st July 1853, it will probably be satisfactory to the Board to have a brief report of its state and progress up to this time. The School opened with upwards of a hundred scholars and the number on the books at the close of the half year was 177 the daily attendance during the latter months averaging 126.

The Board is already aware of the hesitation felt by some parents (chiefly of the Brahmin caste) to send their children to the school in consequence of the resolution to recognize, no distinction of caste; since that decision was made known and understood to be final, this reluctance seems to be generally giving way, and in course of time it will probably cease to have any appreciable influence on the numbers of the School.

The Committee had not thought it necessary hitherto to impose any restriction regarding the periods of admission, but in consequence of the difficulty experienced in classing boys on this system, the time for admission will be in future restricted to the commencements of the half year in January and at midsummer.

An examination was held on the 30th December in the presence of the majority of the Committee and a few of the Native and East Indian Community. The Committee agreed with Mr. Armour in considering that the fluctuating state of the attendance during a part of the half year and the irregular periods at which boys had joined the school rendered an examination at so early a period of its existence, an imperfect test of the merits of the boys; and that it rather served to mark the point from which the respective classes would commence on the re-opening of the school. Under these circumstances a more formal and public examination was considered uncalled for, the result of the examination was however very satisfactory and highly creditable to Mr. Armour and his assistants and with a view to the encouragement of the well disposed, prizes were given to the most advanced in each class. The annexed memorandum will show the subjects on which each class was examined. The course of instruction given in the school is mainly determined by the books which have been supplied for its use by order of the Board; with reference to this subject however, the Committee have observed that the only books of history sent from Madras are the History of India, History of England, and the History of Rome; the school possesses no work on ancient and general history and as a preliminary knowledge of the outlines of ancient and modern history is essential to the profitable study of the history of individual nations and eminently calculated to enlarge the ideas and combat the prejudices of the scholars the Committee request that the Board will be good enough to cause works of this kind to be supplied to the school; the Committee suggest Chambers' Outlines of Ancient History, price 3 shillings as suitable for their purpose.

1st Class. Euclid I. and II., Geography generally and particularly England, Mensuration, English Grammar.

2d Class. History of Rome from beginning to 1st. Punic War. English Grmmar, Geography (Asia.)

3d Class. Æsop's Fables, meanings of words and Elements of Grammar.

4th Class English reading and spelling (words of one and two syllables.)

N. B. The Tamil Classes were not examined partly because from the delay in the appointment of the Head Moonshee and other causes they had not been long in full working order.

In considering further the extent to which the studies of the upper class should be advanced in Trigonometry, Algebra, the English classics and the higher branches of English composition,

the Committee are impressed with the prior importance of giving a practical bent to the education to be imparted so that students on leaving the Government schoôl may find themselves in possession of one or more practical acquirements which may qualify them at once for employment in one or other of the few professions which India can offer at the present time to her educated classes. Passing over employments in the Government Offices and Courts for which a good general education is the best preparation, the Committee have in view the following employments for which they consider young men may obtain a special training in the Government School under their direction.

1st. As Overseers, Maistries and Writers in the Civil Engineer's Department.

2d. Similar appointments in the service of the Railway Company.

3d Employment in mercantile houses and in the superintendence of machinery in Cotton, Sugar, Silk and Iron factories.

The Committee therefore propose that the time of the upper class should be partly occupied in acquiring a knowledge of surveying, road making and building and request that the Board will cause the school to be supplied with 12 copies of Lieut. Ford's work on these subjects. With a view to employment in mercantile houses and manufactories, it would be necessary to give instruction in the English method of book-keeping and in the terms and usages of commerce. A practical knowledge of steam machinery in aid and illustration of lectures on the subject may be gained at Sugar, Cotton and Iron factories in and near Cuddalore.

In proposing to devote a portion of the first class and eventually perhaps of the second also to these studies, the Committee presuppose the foundation of a sound knowledge of English, Geometry, Arithmetic, History and Geography and on the other hand give to the practical instructions above described a preference over an advance to the highest branches of Algebra, Trigonometry and English composition. These higher attainments would still be within the reach of those students whose future prospects are in-

dependent of any professional exertion or whose views for the future rendered these desirable, and the Madras University would afford to young men so circumstanced the necessary opportunities for completing their studies. Students expressing a desire to prosecute Medical studies might also be transferred with that object to the Madras Medical College.

The Committee are aware that these points have already engaged the attention of the Board and are sanguine of its approval and assistance in the course they propose to pursue, they press its early adoption because at the present moment with the introduction of rail roads and canals in immediate prospect and a survey in progress on the spot, a wide field is opening for the employment of young men possessing a knowledge of Civil Engineering, and the wants of the country no less than their own interest call for the formation of such a class of men.

The Committee are gratified to find that Mr. Armour is both able and willing to undertake the instruction of the upper class in the subjects they propose to add to their course of study. A list of books is annexed in the margin, which from their character and the cheap form in which they are published seem well suited for the purposes of the Committee and it is proposed to write at once for two dozen copies of each direct to the publishers should the Board intimate their concurrence in the views of the Committee.

List of books recommended.

Chambers' Outlines of Ancient History price 3 Shillings, 4 dozen copies.

Chambers' History British Empire price half a crown, 2 dozen.

2 dozen copies.

- Rudiments of the art of building by Dobson price 1 Shilling, published by Weall.
- Rudimentary treatise on the Steam Engine by Lardner 1 Shilling published by Weall.
- Rudimentary treatise, on land surveying and Engineering by Baker, 2 Shillings, Weall.
- Rudimentary treatise on Railways by Stephenson, price 1 Shilling. John Weall.

The history of England at present in use is so long and diffuse that it would require 15 months for the 1st Class to go through it. A brief History* is proposed which may be concluded in the half year.

That by Chancellers.

The half yearly account of expenditure being already before the Board, and the steps taken in the establishment of the Schools and

the framing of its rules having been fully detailed on that occasion, it appears needless to repeat these particulars in this report.

I have the honor to be &c.,

(Signed) G. S. FORBES,

Secretary.

CUDDALORE,
4th February, 1854.

P. S. This report though signed by the Secretary embodies the opinions of the whole Committee.

APPENDIX G.

Educational Notice.

1. It is hereby notified for general information that an Annual Public Examination will in future be held at Madras in the month of February, at which three pecuniary rewards of Rupees 500, 300, and 200 each, will be offered for competition to all persons, not in the Covenanted Service of the Honorable East India Company, whose age may not exceed 23 years, and who may be able to produce a satisfactory certificate of good moral character in the form appended to this notice, from the Head of the Educational Institution to which they may have belonged.

2. The examination will be conducted by Examiners, appointed by the Right Honorable the Governor in Council, who, as early as practicable after the conclusion of the examination, will submit a joint Report on the qualifications of the several Candidates to the Governors of the Madras University, for the purpose of being forwarded to Government with the Annual Report of the University Board.

3. The subjects for examination will be as follows: —

English Literature, History, Geography, Arithmetic, Algebra, Geometry, Mechanics, Astronomy, Plane and Spherical Trigonometry, the Vernacular languages, the Latin and Greek Classics, and Moral Philosophy, for which all Christian Candidates shall be at liberty to substitute the Ethics of the Bible.

4. No Candidate will be entitled to reward, whatever may be his superiority over his competitors, unless his knowledge of the different branches of study comes up fully to the following standard.

English.

An intimate knowledge of Grammar and ability to read and explain with facility and correctness passages in any standard prose authors.

History.

An acquaintance with the leading facts of the History of England and of India.

Geography.

An accurate knowledge of the form of the earth, its great divisions and their sub-divisions into countries, the names of the capitals and principal cities of each country, the names and positions of the chief mountains and the origin and course of the chief rivers.

Arithmetic and Algebra.

A knowledge of the simple and compound rules of Arithmetic, and Algebra as far as simple Equations.

Geometry.

Euclid, the first four books.

Astronomy and Mechanics.

A knowledge of the leading facts in Astronomy and Mechanics.

Translation.

Ability to translate with ease and correctness from any prose work in use of the Vernacular languages of this Presidency into English, and from English into one of the Vernacular languages.

English Composition.

Ability to compose upon an ordinary subject an English Essay of fair style and matter.

5. The following will be considered as extra subjects, but will only be counted in the event of the Candidate having passed a satisfactory examination in the prescribed subjects. Roman History, Grecian History, Modern History generally, the Latin and Greek Classics, the 6th Book of Euclid and eleventh to Pro-

position 21, Plane and Spherical Trigonometry, Plane Astronomy, and Mechanics mathematically treated, Moral Philosophy and, in the case of Christian Candidates, the Ethics of the Bible.

6. The names of the successful Candidates and of any others whose attainments shall have been favorably noticed by the Examiners, will be published in the *Fort St. George Gazette* with a view to their employment in the Public Service, and will be communicated to the Heads of Offices at the Presidency and in the Mofussil by a letter from the University Board.

7. Any Candidate who may be detected in resorting to unfair practices at the examination will be excluded from all subsequent examinations.

8. The first examination will commence at the College Hall on Monday, the 13th February 1845, at 11 A. M., applications accompanied by certificates in the annexed form must be forwarded to the Secretary to the University Board on or before the 1st February 1854.

By order, &c.

MADRAS UNIVERSITY, *10th December*, 1853.

(Signed) A. J ARBUTHNOT, *Secretary*.

Statement to be filled up by the Head of Institution proposing Candidate

Name of School.	Name of School Master &c where educated	Name of Candidate.	Caste and Religion	Age	Date of admission into School.	Remarks on the general conduct, moral character and acquirements of Candidate

(Signed) A. J. ARBUTHNOT, *Secretary*

APPENDIX H

MADRAS, 23*d March*, 1854.

From

REV. J. RICHARDS, M. A.
EYRE B. POWELL, ESQ.
W. HOLLOWAY, ESQ.

To

A. J. ARBUTHNOT, ESQ.
Secretary to the Board of the
Madras University.

SIR,

1 We have the honor to report upon the Public Examination, which we have conducted under our appointment by Government, and in accordance with the instructions contained in a Notification of the University Board, 10th November 1853.

2 Those instructions divided the subjects for examination into two classes, one comprising those in which reasonable proficiency was imperative upon every Candidate for reward, the other containing such as were optional. The accompanying paper will show the numerical value we have attached to each subject. It became necessary to settle this, because all the Candidates were not prepared to compete in the same subjects.

3. We then distributed the several subjects among ourselves, assigning two examiners to each extra subject. To diminish our own chances of error, and to render any misappreciation of a Candidate's answer more easy of detection, we assigned to each question a certain number of marks. The tabular statement attached to this report exhibits the number of marks obtained by the several Candidates in the several subjects; and each collection of answers is also accompanied by a statement which shows

the number of marks assigned to each individual answer. The absolute and relative merit of each paper will be readily seen from these tables.

4. We recommend that the answers be open to the inspection of all persons, who are however remotely interested in the examination, and more especially to that of the Candidates themselves. We do not deem it expedient to print the answers; because we think it not improbable that such a course would deter timid Candidates from coming forward upon future occasions.

5. We consider it necessary to express our opinion that the elementary subjects specified in the Government Notification constitute as low a standard as could be fixed consistently with what we conceive to be the object of the examination.

6. In English literature our instructions confined us to standard prose authors, and we held it inexpedient to select passages for examination from a very remote period of our literary history. We therefore confined ourselves to standard authors ranging from Milton downwards. As this part of the examination was purely an exercise upon language, the difficulties which we proposed for elucidation were such as arose from the construction and not from the matter of the selected passages.

7. In English and Indian History we believe that the questions embraced such points only as may with propriety be denominated "leading facts." We have considered this term to comprise all such great events as have given a character to an epoch, or have had a marked influence upon the destiny of the nation We are unable to conceive any knowledge of history of the slightest value which does not include these.

8. Besides the examination in writing, in several subjects we tested the Candidates orally. The examination in Geography was entirely so conducted, and embraced questions bearing on the configuration of the globe, the relative positions of countries, towns and lakes, the courses of rivers and directions of mountain chains, and generally the broader features of the subject We considered ourselves precluded by the language of the notification from questioning the Candidates on the climate, population and

productions of different regions; but, excluding these points, we made the examination a tolerably searching one.

9. The elementary mathematical subjects require no particular remark.

10. It should be observed that the subjects now enumerated are the only ones absolutely required by the notification, and that it would have been competent to us to recommend the conferring of the rewards upon the successful Candidates, if no further knowledge had been exhibited.

11. In the extra subjects, mathematics have assumed a wider range; and considering this fact, and the general character of the questions, we deem the attainments exhibited highly creditable.

12. In the extensive subject of modern History we considered it desirable to embrace the whole period from the fall of the western empire to the close of the French Revolution. We confined our questions to the nation which was most prominent at a particular period, and we excluded the history of nations and events which were merely subordinate. Even narrowed in this manner, it will be found that the questions embrace a wide field, and demand, for successfully answering them, both accurate and extensive information. We consider the result very favourable.

13. We conceived that, in the subject termed the "Ethics of the Bible," the object of Government would be met by setting a paper on the Bible equivalent to that on Moral Philosophy.

14. We have no hesitation in recommending that the first Government reward be conferred upon T. Mootoosawmy. We feel that he has displayed a vigour of intellect and an extent of attainments which demand special mention from us. He has a large numerical superiority over his competitors, has done most respectably in nearly every subject, and is first in four of the most important.

15. We recommend the conferring of the second reward upon V. Rajahgopaul. He has shown a very creditable acquaintance with most of the subjects, and has an exceedingly good knowledge of English, which he writes with facility and correctness.

16. We consider A. Narraina Row entitled to the third reward

The numerical return shows that he has a very considerable acquaintance with the several subjects of examination.

17. P. Chinnatumbee is the next in order. Although excluded by position from reward, he is entitled to our commendation. He has done very creditably in Mathematics, and is first in three of its branches.

18. Mr. Spenser and P. Vurda Charry are equal in the total number of their marks. The papers of the former in the Bible and English Literature are highly creditable; and in the English oral examination he was superior to the other Candidates. The latter also has exhibited more than an average amount of ability and information.

19. While stating that the examination has been wide in its range, searching in its character, and very creditable in its results to all the Candidates, we venture to express a hope that Government will exhibit practically an appreciation of their merits, and thereby prove that intellectual distinctions are not barren honours. We feel a strong confidence that the same intellectual vigour and energy, which have enabled these young men to attain their present position, would render them highly efficient in the service of the state.

20. By a reference to the columns in which we have entered the numbers of marks obtained by each of the Candidates in the essential and in the extra subjects, it will be seen that those who have been most successful in the one class have also been most successful in the other. This appears to us to demonstrate that the higher branches of knowledge have not been acquired at the expense of the lower, but that the education of these young men has been sound and well grounded.

21. Before closing this Report we beg to suggest a few alterations in the present plan of examination.

22. We recommend that English Poetry be included in the list of optional subjects.—It is the case with English, as with most other languages, that it is more easily acquired by foreigners through Poetry than Prose. If the rendering of passages of the Poets into good English Prose be required, two most im-

portant objects will be gained,—a knowledge of the structure of the language, and a most useful exercise in composition.

23 We beg to suggest that there be added to the list of essentials a general knowledge of the mensuration of areas, along with the books of Euclid, on which it naturally depends; and that the elementary subjects also include Algebra to the end of quadratic equations. In Plane Trigonometry we are of opinion that a question or two should be made to bear on the theory and application of the Theodolite, Level and Vernier. We also recommend that the examination in Mechanics, among the extra subjects, shall in future be made to include questions on Machines, and more especially on the Steam Engine.

24. We suggest that hereafter no extra subject be allowed to count at all unless a reasonable proficiency be attained in it. We think that ⅓ of the whole number of marks allotted, might well be fixed as the minimum. There can be no benefit, but must be positive injury, in encouraging young men to fritter away their attention on a large number of subjects, with the hope of obtaining distinction by variety and not solidity of attainments.

25. We are also of opinion that Political Economy and the principles of Jurisprudence should be included in any future scheme. These subjects have a high intrinsic importance, and an acquaintance with them is calculated to have beneficial influence upon the future usefulness of the Candidates.

We have the honor to be, &c.,

(Signed) JOHN RICHARDS,
„ EYRE B. POWELL,
„ W. HOLLOWAY.

QUESTIONS PROPOSED IN THE PUBLIC EXAMINATION,

FEBRUARY 1854.

English Literature.—From 10 to 2½.

I. Put the following passage into Modern English, exhibiting clearly the author's train of thought.

"For as in a body when the blood is fresh, the spirits pure and vigorous, not only to vital, but to rational faculties, and those in the acutest and the pertest operations of wit and subtlety, it argues in what good plight and constitution the body is; so when the cheerfulness of the people is so sprightly up, as that it has not only wherewith to guard well its own freedom and safety, but to spare, and to bestow upon the solidest and sublimest points of controversy and new invention, (3) it betokens us not degenerated, nor drooping to a fatal decay, by casting off the old and wrinkled skin of corruption to outlive these pangs, and wax young again, entering the glorious ways of truth and prosperous virtue, destined to become great and honorable in these latter ages. Methinks I see in my mind a noble and puissant nation rousing herself like a strong man after sleep and shaking her invincible locks: Methinks I see her as an eagle muing her mighty youth, and kindling her undazzled eyes at the full midday beam; purging and unscaling her long abused sight at the fountain itself of heavenly radiance; while the whole noise of timorous and flocking birds, with those also that love the twilight, flutter about, amazed at what she means, and in their envious gabble would prognosticate a year of sects and schisms."

1. What analogy runs through the above passage?

2. What is the force of the distinction between the vital and rational *faculties* of the individual? To what faculties of a state does Milton compare them in this passage?

3. "It betokens," &c. what is the antecedent of *It?*

Note.—"*Muing*" = Moulting, shedding, putting off.

"*Pertest*" = Liveliest, Briskest.

II. Paraphrase the following passage:—

"To love an enemy is to do him all the real offices of kindness that opportunity shall lay in our way. Love is of too substantial a nature to be made up of mere negatives, and withal too operative (2) to terminate in bare desires. Does (3) Providence cast any of my enemies' concernments under my power; as his health his estate, preferment, or any thing conducing to the conveniences of his life? Why, in all this it gives me an opportunity to manifest, whether or no I can reach the sublimity of this precept of loving my enemies."

(1) Define the word "concernments"

(2) What is the meaning of the root of the word "operative" what is the force of the affix? Mention some other words from the same root with their meanings.

(3) Is there any peculiarity in the use of the word "does."

III. Paraphrase the following:—

"The English people are satisfied, that to the great the consolations of religion are as necessary as its instructions. They too are among the unhappy. They feel personal pain, and domestick sorrow. In these they have no privilege, but are subject to pay their full contingent to the contributions levied on mortality. They want this sovereign balm under their gnawing cares and anxieties, which, being less conversant about the limited wants of animal life, range without limit, and are diversified by infinite combinations in the wild and unbounded regions of imagination. Some charitable dole is wanting to these, our often very unhappy brethren to fill the gloomy void that reigns in minds which have nothing on earth to hope or fear; something to relieve in the killing langour and overlaboured lassitude of those who have nothing to do, something to excite an appetite to existence in the palled satiety which attends on all pleasures which may be bought, where nature is not left to her own process, where even desire is anticipated, and therefore fruition defeated by meditated

schemes and contrivances of delight; and no interval, no obstacle, is interposed between the wish and the accomplishment.

1. Explain the words "*Privilege*" and "*Contingent*". Do you know any other use of the latter word?

2. "They want this sovereign *balm*." To what does the word *balm* refer?

3. What is the meaning of the word satiety, what other words are derived from the same root? How do they differ from it in sense?

4. Explain the words "Dole," "Lassitude," "Languor" "Palled," Fruition."

English Grammar.—1½ hours.

1. What is meant by Case? How many cases are there in English? What is expressed by each?

2. How many future tenses are there? How does each represent future time? State the present and past tenses which are analogous to these? Give examples of the use of all and examine how each example answers to your definition.

3. What are the significations of the auxiliary "*Can?*" How does it differ in its use from "could." Give an example of the difference.

4. What is a Preposition? Give examples of the use of prepositions with the following words—Consult, Inform, Glide, Mount, Writhe, Distinguish. Show the correctness of your definition with reference to each example.

5. What is meant by Concord? Enumerate some English Concords and give examples of each.

6. Into what two parts is every sentence divisible? What is expressed by each? Show that your answer is true of the following:—

"Law has been correctly defined to be a rule of human action prescribed by sovereign authority."

7. Exemplify the use of the following verbs in company

with prepositions—Concur—Consist—Contend. Show how their meaning varies with the preposition used.

English History.—10 to 1½.

1. What is the date of the Norman Conquest? What was its effect upon the condition of the people? What scheme of policy did the conquerors bring with them.

2. Who was Thomas a Becket? What the constitutions of Clarendon? In what reign were they promulgated? What foreign conquest was made at this time?

3. Who was the third king of the House of Plantagenet? What is the aspect of foreign affairs in his reign? At what date was Magna Charta signed? Enumerate its most marked provisions.

4. Upon what title did Edward III. claim the French Crown? Were his claims well founded? How long did the English struggle for the conquest of France? Mark the points of the contest at which France and England respectively predominated.

5. What date is usually given to the Reformation in England? Is it correct to assign any exact date? Why has a particular date been given to it?

6. What is meant by the Long Parliament? Give a brief sketch of its principal proceedings? Can you divide its history into periods with reference to the character of those proceedings?

7. What is meant by the English Revolution? Sketch briefly the events which led to it? By whom was it effected? What motives animated its authors?

8. Give the dates of the Leicester Parliament, Battle of Agincourt, Treaty of Troyes, Peace of Utrecht, of the Battles of Blenheim, Minden, La Hogue, Trafalgar, the Nile and Waterloo, and of the passing of the Reform Bill.

Indian History.—3 to 6½.

I. What English Sovereigns were contemporaries of Akber?

What is the nature of his internal policy? State what you know of his Revenue system.

II. How did Aurangzib obtain possession of the throne?

III. What was the policy of Dupleix? How did the state of the Carnatic favour his designs?

IV. Sketch briefly the events which led to Clive's expedition to Bengal? What was the immediate result of his interference?

V. What led to the collision between Hyder and the English power?

VI. Compare the policy of Lord Cornwallis with that of Lord Mornington. What Revenue system was introduced by the former?

VII. What was the state of the Mahratta Power at the close of the last century? By what great Generals was it broken? Enumerate their chief exploits?

VIII. What considerations gave rise to the Afghan war? By what English Generals were its disasters retrieved?

IX. Describe the origin of the Sikh Power. What led to the first Sikh war? Mark its leading events.

X. Give the dates of and the names of the parties engaged in the following battles. Paniput, Wandewash, Porto Novo, Laswaree, Seringapatam, Maharajpùr, Meeanee.

Geography.—(vivâ voce.)

1. Give the shape of the earth, the ratio between the land surface and water surface, and the meaning of equator, meridian latitude and longitude. Also state the ratio between the land-surface to the north of the equator and that to the south.

2. Compare the areas and population of the different continents.

3 Describe the courses of the Danube, Rhine, Rhone, Don, Elbe, Ebro, Po, Garonne, Mississippi, Ohio, Mackenzie, Orinoco, Oxus and Menam.

4. Trace the course of a vessel, by the most direct route, from Archangel to the mouth of the Don.

5. Give the position of Bourdeaux, Havre, New York, St. Petersburg, Odessa, Bussora, Trebisond, Bankok, Liverpool, Glasgow and Washington; and mention the rivers on which any or all of them are situated.

6. Name the parts of America colonised by European states, and the states that sent out the colonists.

7. Name the principal East Indian islands, and describe their relative situations.

8. Where are lakes Champlain, Nicaragua, Tchad and Baikal?

9. Name the capitals of Bavaria, Wurtemberg, Saxony, Portugal, Siam, Japan, Brazil, La Plata and Denmark.

10. State the relative positions of Papua, New Zealand, Australia and Van Diemen's land; and give the capitals of the three last.

11. Name the principal rivers which traverse Hindoostan proper, and state where they rise, in what directions they flow, where they fall, and what cities stand on their banks—where does the junction of the Jumna and Ganges take place? What is the name of the province above the junction, and what of the country immediately to the north of that province?

12. Name the boundaries (particularly the natural boundaries) of the kingdom of Oude—what is its capital, and on what river situated?

13. By what Mountain ranges is the valley of the Nerbudda bounded? Through what provinces does it flow; and where does it fall?

14 Point out the exact position of California—supposing you embark from its coast, and sail southward along the coast, double Cape Horn, and thus circumnavigate the whole continent of South America, name in their order, the states whose seaports you pass.

15. Making the same voyage as before name in their order, the seaports at which you may call

Arithmetic.—From 10—1.

1. Explain the reason of "carrying one for every ten units" in addition and multiplication.

2. Divide 38765172 by 84 according to short division, breaking up the divisor into three factors. Explain the process by which the total remainder is obtained.

3. A wheel is three and a half feet in circumference, how often will it turn in passing over eighty-four yards?

4. Reduce 517865 pice to rupees, annas and pice.

5. The rupee is at 1*s.*, 11½*d.*; what is the equivalent in Indian currency for 320£, 14*s.*, 6*d.*?

6. If sixteen men, working eight hours a day, can dig a trench thirty-two feet long, five wide and six deep in five days; how many days will seven men require to dig a trench thirty six feet long, four wide and seven deep, supposing their working day to contain ten hours?

7. The discount on a sum of money due nine months hence is Rs. 18, As. 12, the rate of interest being 3½ per cent. per annum; what is the debt?

8. Add together ⅓ of ⅔ of Rs. 4, As. 8, ½ of ⅔ of Rs. 9, As. 5 and ⅓ of ⅔ of Rs. 6, As. 6.

9. Divide ·0065442 by ·00078.

10. Extract the square root of ·0001442401.

11. Express $\frac{3}{15}$ of a guinea as the decimal of 1 £.

12. The two adjacent sides of the floor of a rectangular room are 20 feet, 4 inches and 32 feet, 3 inches; what is the area of the floor?

Algebra.—10—1.

1. Supposing $a = 10$, $b = 3$, $c = 8$, $d = 4$, $e = 5$, and $f = 2$, write down the single number equivalent to $a - (b - c) + d - (e + f)$.

2 Multiply $a^4b + a^3b^2 + a^2b^3 + ab^4$ by $a^2b - ab^2$

3 Divide $a^{\frac{5}{2}} - a^{\frac{5}{2}} b^{-\frac{1}{2}} + 3 a^{\frac{3}{2}} b^{\frac{1}{2}} - 3 ab - 3 a^{\frac{1}{2}} b^{\frac{3}{2}} + 3 b^{\frac{2}{3}}$ by $a^{-\frac{1}{2}} - b^{-\frac{1}{2}}$.

4. Raise $2 + \sqrt{-2}$ to the fourth power, reducing the result to the simplest form.

5. Explain the difference between a surd and an impossible quantity, giving an example of each.

6 Extract the square-root of $1 - 2x^{\frac{1}{2}}$ to four terms.

7. Find the greatest common measure of $x^3 - 8x^2 - 12x + 144$ and $3x^2 - 16x - 12$.

8. Explain fully the meaning of a negative quantity: and prove that $-a \times -b = +ab$.

9. What is a^0, and how comes it to have the signification it possesses?

10 Solve the following equations.

$$x - \frac{1-x}{3} - \frac{5x+1}{4} = \frac{x-4}{2} \quad \text{—— } (a).$$

$$\left.\begin{aligned} \frac{x-4}{2} + 3 &= \frac{y+6}{2} \\ 4x + 3y &= 50 \end{aligned}\right\} \quad \text{—— } (b)$$

$$\frac{\sqrt{9x} - 4}{\sqrt{x} + 2} = \frac{15 + \sqrt{9x}}{\sqrt{x} + 40} \quad \text{—— } (c)$$

Euclid.—3 to 6.

1. If from the ends of the side of a triangle there be drawn two straight lines to a point within the triangle, these shall be less than the other two sides of the triangle, but shall contain a greater angle.

2 If two triangles have two angles of the one equal to two angles of the other, each to each, and have likewise the sides adjacent to the equal angles in each equal, then shall the other

sides be equal each to each, and also the third angle of the one equal to the third angle of the other.

3. All the exterior angles of any rectilineal figure are together equal to four right angles.

4. If a parallelogram and a triangle be upon the same base and between the same parallels, the parallelogram shall be double of the triangle.

Hence deduce a rule for finding the area of a triangle.

5. In every triangle, the square of the side subtending either of the acute angles is less than the squares of the sides containing that angle, by twice the rectangle contained by either of those sides, and the straight line intercepted between the perpendicular let fall upon it from the opposite angle, and the acute angle.

6. Draw a tangent to a circle from a given point without it.

7. The angle in a semicircle is a right angle.

8. Inscribe an equilateral and equiangular pentagon in a given circle.

9. To trisect a right angle, *i. e.* to divide it into three equal angles.

10. To describe a circle which shall pass through three given points, which are not in the same straight line.

Euclid.—(vivâ voce.)

I. Prove the 48th Proposition of the first Book.

II. Explain the construction of the first problem in the second Book.

III. What is the last proposition in the fourth Book? Explain the construction.

IV. There being six elements in a plane triangle, (three sides and three angles,) state in how many and what cases of equality between three elements in one triangle and the corresponding elements in another, the equality of the triangles will be the necessary result.—In what case will it be doubtful?

V. What is the ratio between one side and the diagonal of a square?

VI. From a point without a circle, a tangent and a secant are drawn to the circle,—what is the relation between the tangent and the segments of the secant?

Elementary Astronomy and Mechanics.—2 Hours.

(1.) Give a brief sketch of the solar system, and point out the nature of the planets' orbits, and their positions relatively to the plane of the ecliptic.

(2.) What is the distance of the Sun from the Earth? Point out in a general manner the way in which this result has been obtained, and how we are enabled to estimate the distances of the fixed stars.

(3.) Point out and illustrate by a diagram the causes of the variation in the length of the day and night, and show how the effects vary in the arctic regions and within the tropics.

(4.) Show how Eclipses of the Sun and Moon are occasioned, and state under what circumstances alone they can occur.

(5.) Explain the principle of the lever. How many kinds of the simple straight lever are there? Give examples, and show how the power and the weight in each case are distributed, and what are the conditions of equilibrium.

(6.) In the wheel and axle, what is the ratio of the power to the weight?

(7.) What is the advantage of a fixed pulley? Explain what mechanical advantage is gained by a system of pulleys with one rope and one moveable block.

(8.) What is force? how measured? what is momentum?

(9.) "Action and re-action are equal and opposite;" explain and illustrate this law.

(10.) Explain the principle of the Barometer.

English Essay.

SUBJECT.

"The causes that have led to the overthrow of Empires."

Greek and Roman History.—10—1½.

I. Under what Persian monarch was Greece first invaded? What Greek states resisted the invasion? What battle terminated it?

II. What great events distinguished the second Persian war?

III. To what party did Pericles belong? Enumerate some of his chief contemporaries.

IV. What Greek power besieged Syracuse? In what war? Under what Generals? With what success?

V. What were the designs of Philip of Macedon in Greece? By what great Greek statesman was he resisted?

VI Enumerate the principal conquests of Alexander? What became of his empire at his death?

VII. Enumerate the principal Italian tribes conquered by the Romans in the order of the conquests.

VIII. Through whom did the Plebeians obtain the right of election to the consulship? What was the nature of the Tribunitian power?

IX. What led to the second Punic war? Who was the Carthaginian General? What his principal achievements? Who were engaged in the battle of Metaurus? What was its result?

X. Who were the Gracchi? What measures were proposed by them.

XI. With what Roman party was Julius Cæsar connected? Sketch briefly his career in Gaul.

XII. Give the dates of the battle of Marathon, the peace of Antalcidas, the death of Pericles, the capture of Rome by Brennus, the death of Alexander the Great, the death of Pompey and the capture of Jerusalem by Titus.

First Paper—Modern History.—10 to 2.

I. Give a rapid sketch of the condition of Europe at the fall of the Western Empire? What tribes overturned it? Describe their geographical distribution after the conquest.

II. What was the state of Arabia at the appearance of Mohammed? Was it favorable to his designs? What causes led to the rapid spread of his religion? Sketch briefly the rise of the Saracenic empire.

III. What was the dispute as to Investitures? Describe the conduct of the parties engaged in it, and enumerate the principal events which marked it. Where and when was it settled?

IV. Describe briefly the rise of the empire of Charlemagne. What religious causes aided him? What was his character and that of his reign?

V. What is meant by the schism of the Papacy? How long did it last? What was its effect upon the Papal Power?

VI. What was the social and intellectual state of the 15th Century? By what great events other than political, was it marked?

VII. Into what kingdoms was Spain divided at the close of the 15th Century? Was there anything remarkable in their political institutions? Mark briefly their distinctive features.

VIII. State briefly the title of the Emperor Charles V. to all his dominions? What led to the hostility between him and Francis I.? What advantages were possessed by each in the struggle?

IX. How did the state of the Papacy at the beginning of 16th Century prepare the way for the Reformation? What practice first excited the hostility of Luther? What in the state of Germany assisted his efforts? What was the object of the League of Smalkald.

Second Paper—Modern History.—2½ to 6.

I. What circumstances led to the interference of Gustavus Adolphus in Germany? To what great generals was he opposed? Enumerate his chief exploits. State generally the provisions of the peace of Westphalia?

II. What was the nature of the religious wars in France? Point out the most remarkable periods of the struggle. Was any other European country similarly agitated at the same time?

III. What was the foreign policy of Richelieu? What assistance did he derive from the state of Europe? Did England take any part in European politics at this time?

IV With what English sovereigns was Louis XIV. contemporary? Contrast the early with the latter events of his reign. What was its intellectual character?

V. What two powers commenced the seven years' war? What peace did it succeed? What great military events marked it? How did England become involved in it? Was she a gainer by the struggle?

VI. How did the state of France prepare the way for the Revolution? Indicate a few of the causes, which rendered it so different in character, from that of England. What was the origin of the Revolutionary war?

VII. Indicate the great points of the Revolutionary war, showing the position of France at each of them.

VIII. What was the political feeling of England during this struggle? What was her state economically and intellectually?

IX. Give the dates of the battle of Tours, First Crusade, Taking of Constantinople, Expulsion of the Moors from Spain, 1st Doubling of the Cape of Good Hope, Accession of Charles V., Destruction of the Spanish Armada. Give the dates of, and the names of the parties engaged in the following battles. Leipsic, Almanza, Malplaquet, Fontenoy, Fleurus, Austerlitz, Vittoria. Give also the dates of and the names of the parties to the treaties of Utrecht, Aix la Chapelle, Paris and Campo Formio.

Latin Translation.—2½ Hours.

(1.) Translate the following passage:—
From Jamque ascendebant collem——
To ———————— fastigia suspicit urbis
Virg Æn I. 419—438.

a What city is here spoken of? Where situated? By whom and when destroyed?

b Explain the constructions of *strata viarum, pars ducere, &c.*

Qualis apes, &c.,—supply the antecedent.

(2.) Translate the following passage :—

From Apud Xenophontem autem—

To —— corporis vinclis relaxaverint

Cicero, Cato Major, Sec. XXII.

a "*Cyrus major*," who was Cyrus Minor?

b What moods does *dum* govern?

(3.) Translate into Latin—

We the Consuls still suffer the sword to sleep in its scabbard. Yes, I still wait, I still delay, for I wish you not to perish till you cannot find a citizen, fervent enough to excuse or defend you. Leave the company of honest citizens. Make war against your country.

Greek Translation.—2 Hours.

(1.) Translate the following passage :—

From Ἐστι δὲ πεδίον..... .....

To ..... χρηίσκοντο τῷ ὕδατι.

Herod. lib. iii. c. 117.

(2.) Translate the following passage :—

From Ἐπειδὴ δὲ βοὴ πλείων τε.....

To .... τῆς νυκτὸς ἀπιών.

Xenoph, Anab. lib. iv. c. 7.

Euclid, Book VI. and Book XI. to Prop. 21.

1. Two parallelograms are equal and equiangular; prove that the sides about equal angles are reciprocally proportional.

2. State the leading steps by which it is found that similar triangles are to one another in the duplicate ratio of the homologous sides. Show from this proposition that the area of a circle varies as the square of the radius.

3. Define a pyramid, dodecahedron and icosahedron; and name the regular solids.

4. If two right lines be parallel to one another, and one of them be perpendicular to a plane, prove that the other is also perpendicular to the same plane.

5. What proposition of the 6th Book may be considered as the general case of the 47th of the 1st Book

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Plane Trigonometry.

1. Define the terms *sine*, *cosine*, *tangent*, *secant*, and from your definition show how their algebraic signs will vary.

2. Prove the following formula.

$$\text{Sin } A = \frac{\tan A}{\sqrt{1 + \tan A}}$$

$$\text{Cos } A = 2\,\text{Cos}^2 \frac{A}{2} - 1$$

$$\text{Tan } A = \sqrt{\frac{1 - \cos 2A}{1 + \cos 2A}}$$

$$\text{Sec } A = 1 + \tan A . \tan \frac{A}{2}$$

3. Prove that

$\text{Cos } 3A = 4 \cos^3 A - 3 \cos A$; and hence find the value of sin 18°

4. Wanting to know the breadth of a river, I measure a base of 600 yards along the bank, and at its extremities find the horizontal angles to an object on the opposite bank to be 64°, 11′ and 78°—38′; what is the breadth.

log 2 = 0,30103	log sin 78°—38′ = 9,9913971
log 3 = 0,4771213	log sin 64°—11′ = 9,9543352
log 8,76 = 0,9425041	log sin 37°—11′ = 9,7813010
log 8,77 = 0,9429996	

5. Determine the distance between two inaccessible objects by observations made from two stations, the distance between which is known.

6. Given the three sides of a triangle find the area.

7. Explain briefly the construction of a table of logarithmic sines and cosines

8. Find the number of degrees and minutes in an angle which is subtended by a circular arc = radius.

Spherical Trigonometry and Plane Astronomy.—10½—2.

1. If A, B, C be the angles of any spherical triangle and a the side opposite A, prove

$$\cos a = \frac{\text{Cos A} + \text{Cos B. Cos C}}{\text{Sin B. Sin C}}$$

2. In the solution of right angled spherical triangles by Napier's rules, what cases are ambiguous?

3. State the properties of the polar triangle.

4 What is the cause of twilight? Show how its duration will vary in different latitudes and at different times of the year.

5. What are the moon's librations? Explain their causes.

6. Enunciate Kepler's laws, and show what consequences have been deduced from each.

7. Explain the apparent irregularities in the motion of an inferior planet. What is its relative position to the earth when it appears stationary.

8. Explain very briefly the nature of the five astronomical corrections, and show in what way they affect observations.

9. Distinguish between a sidereal, a solar, and a mean solar day; and define the equation of time, stating the two causes from which it arises.

10. Determine the latitude of a plan from two equal altitudes of the sun observed before and after noon, neglecting the change in declination in the interval.

11. Enumerate the various methods of finding the longitude of a place. Which is the most used at sea ?

12. Determine the longitude of a place by observing the increase of the moon's right ascension in the interval between passing the meridian of Greenwich, and that of the place of observation.

13. To find the length of the day at any place.

14. Describe the mural circle and the nature of the observations made with it.

15. Show in what circumstances solar and lunar eclipses differ, and calculate the circumstances of a solar eclipse at a given place.

Mechanics.

1. Into what branches is the science of Mechanics divided, and of what do they severally treat ?

2. If any two forces act at the same point, their resultant is represented in direction and magnitude by the diagonal of the parallelogram, whose sides represent the magnitude and directions of the component forces.

Hence find an expression for the resultant.

3. If a point be kept at rest by those forces, show that they may be represented by the sides of a triangle parallel to their directions.

4. Define the centre of gravity, and find it in a plane triangle.

5. Find the relation between the power and the weight when there is equilibrium on an inclined plane, the power acting in any given direction.

6. Find the ratio of the power to the weight in a system of pulleys, where each pulley hangs by a separate string ; and all the strings are parallel.

7. How is friction measured—On what does it depend *only*—Show how the coefficient of friction may be practically determined.

8. What is meant by stable and unstable equilibrium, show what are the conditions of each.

9. A beam of uniform density rests on two given inclined planes, find the position in which it will rest.

10. Enumerate the laws of motion.

11. When a body is projected with a given velocity (v), and is acted on in the same direction by a constant accelerating force (f)

$$S = v\,t + \tfrac{1}{2} f t^2$$

12. A body descends on an inclined plane, find the accelerating force.

13. The length of an inclined plane is 100 feet, and its inclination 60°, find the time of falling and the velocity acquired.

14. Explain the principle of the pendulum, and find the time of oscillation of a *simple* pendulum.

First Paper.—Moral Philosophy.

1. What is the subject matter of moral philosophy—Do you consider this branch of knowledge a science or an art?

2. Exhibit clearly the relation between the terms right, duty, obligation and sanction—Show from your definition, that the term, moral obligation, is a correct one.

3. What is the standard of morality—in determining the moral quality of an action, is it necessary to refer it directly to your moral standard—Explain your answer and apply it to the following case. A with a wife and family starving steals one cullum of paddy from B a meerasidar who possesses 300 velies of land; what is your judgment upon this act and how do you form it?

4. What properties are essential to the existence of a moral agent?

(*a*) A strikes B apparently without provocation—Show that the judgment of C, a by-stander, upon the act will vary according to the possession or non-possession of those properties by A.

5. Into what principal parts is an action resolvable—To which of them does its moral quality attach?

6. What is meant by motives?

(a) A labours hard the whole day and earns a shilling for the support of his family. B kills a man for the sake of a shilling. What is the motive in each of these cases. Do the acts differ in their moral quality—If so, upon what does the difference depend.

7. What are moral sentiments—have these been always the same with men of different ages—If not, how do you explain the diversity?

8. Into what principal heads are moral duties divisible—Can positive law undertake to enforce all moral duties? Give a reason for your answer.

Second Paper.—Moral Philosophy.

1. How do Justice and Beneficence severally impose obligations? Do these differ, in their binding character? What emotions are called forth by them respectively?

2. Show that the existence of Property is a violation of rights. Is not this a fatal objection to the morality of the institution? Show the principle, upon which all similar moral questions must be resolved.

3. Upon what principle can the unrestrained right of devising property be vindicated? What limitations would morality impose upon the freedom given by English law?

4. How does a promise impose obligations? How does it differ from and how does it resemble a contract? Are promises universally binding? What circumstances may remove the obligation of performing a contract? What circumstances prevent its obligations from being incurred—Apply your answer to the following cases.

(a) A without receiving and without stipulating for the receipt of any equivalent from B promises to give B Rupees 500. The law of Rome and of England would refuse to enforce this bare promise. Is their course vindicable on moral principles?

(b) A gains from B Rupees 50 at a game of chance fairly played. Would B be justified in refusing to pay because law will not enforce the obligation?

(c) A without asking information hires a house of B which B knows to be uninhabitable, should this contract be enforced in law according to the principles of ethics?

5. What are the general duties of parents? Whence derived? What their correlative rights? On what principle should these be measured? Are you of opinion that the power of life and death given by the early Roman law, and that of disposing of their children in marriage given by Hindoo custom, fall within the scope of their rights?

6. Cato unwilling to survive the humiliation of his party and his country killed himself at Utica. What is your judgment upon this act? How would it differ if he had lost his life in battle for the same cause?

The Bible.

1. State the *a priori* argument for a Divine Revelation.

2. What moral ideas do we find prevailing in the Patriarchal times as indicated by the Bible?

3. Give a brief account of Moses—What form of government did he establish and how?

4. Point out the peculiar features of the legislation of Moses. What was the great end in view, and how was it carried out?

5. What was the nature of his enactments concerning the rights of property, slavery, and marriage?

6. What is the moral law—Why so called—Do all its enactments involve strictly moral duties? Give reasons for your opinion.

7. Through what political changes did the Hebrew nation pass, and by what causes brought about?

8 Explain your views with respect to the Book of Job. State the argument of Job's friends, and how refuted.

9. In what essential particulars does the Christian system of Ethics differ from that of the Old Testament,—and from all human systems.—What new element is introduced?

10. What place does the doctrine of future rewards and punishments hold in the Christian system? Answer the objection urged against the Scriptural doctrine as, "a mercenary and selfish motive to virtue."

11. Define the term "virtue" as used by moralists—What is its correlative in the Christian system—How do they differ—What do you understand by the former term as used in the passage "and to your faith virtue."

12. Define the term "Religion"—How is it used in the New Testament—Explain the passage," Pure religion and undefiled before God and the Father is this, to visit the fatherless and widows in their affliction, &c."

13. What is meant by "Moral Responsibility." Is it universal—How is this enforced by St. Paul in his Epistle to the Romans?

14. "By the law is the knowledge of sin" Explain this—What law does the Apostle mean—What is his inference from this proposition?

15. "And brought life and immortality to light by the Gospel"—How do you understand this—Explain and illustrate.

16. What is the doctrine of the New Testament respecting civil Government?

17. State Hume's argument against the credibility of miracles, and show its fallacy.

18. What argument do you deduce in favor of Christianity from the moral purity of its doctrines?

Abstract account of the actual Disbursements of the Madras University during the last six months of the Official year 1852-53, *or from 1st November* 1852, *to 30th April* 1853.

	General Charges	Rups.	A	P	Rups.	A.	P
	By amount paid to Secretary's Establishment, - -	483	0	0			
	„ do to Normal Class of Pupil Teachers, from 1st Feb to 30th April, 1853,	131	15	1			
	Madras University						
Educational expenditure.	„ amount paid in salaries in the Collegiate Department, from 1st Feb. to 30th April 1853, -	4,365	0	0			
	„ do. in salaries in the High School, from 1st Nov. 1852, to 30th April 1853, - -	7,612	11	3			
	„ do in salaries in the Primary School, from 1st Feb. to 30th April 1853, -	769	7	3			
	„ do in salaries in the Vernacular Department, from 1st Nov. 1852, to 30th April 1853,	2,062	8	0			
	„ do. on account of Government Scholarships, from 1st Nov 1852, to 30th April 1853,	493	6	9	15,918	0	4
	„ do. House Rent, from do to do. - - - - - -	.....	..	..	1,260	0	0
Contingent charges.	Books and Book binding, -	120	13	0			
	Furniture, - - - - -	363	0	0			
	Printing, - - - - -	229	8	11			
	Stationery, - - - - -	173	14	7			
	Sundries, - - - - -	336	2	9			
					1,223	7	3
	Deduct.						
					18,401	7	7
	School fees realized from the Madras University, from 1st Nov 1852, to 30th April 1853,	2,150	8	0			
	„ do. from the Primary School, from 1st Jan. to 30th April 1853, - - - - -	894	0	0			
	Amount of interest realized at different periods on Elphinstone's Endowment Bonds,	87	7	6			
					3,131	15	6
	Net amount of expenditure, -	....	..		15,269	8	1

Madras University,
23*d June*, 1854,

Statement shewing the amount received on account of the Government Provincial Schools from 1st May to 31st October 1853, disbursements during the same period and the balance of Cash remaining on the 31st October 1853.

		Amount.		
		Rups.	A	P.
To amount advanced by the Madras University on account of passage money for 2 Head Masters for Provincial Schools, - - - 2,000 0 0				
,, do. do. by the Madras University on account of Cuddalore Provincial School, - - - - 1,491 0 0				
,, do. do. by the Madras University on account of Rajahmundry Provincial School, - - - - 622 0 4				
	4,113	0	4	
CUDDALORE.				
To amount received from the Collector's Treasury,	1,500	0	0	
,, do. do. do. do. do.	427	7	6	
	6,040	7	10	
DEDUCT.				
Disbursements as per Abstract account from 1st May to 31st October 1853, - - - - - -	5,776	2	4	
Balance of Cash on the 31st October 1853, appropriable to future disbursements at Cuddalore, - -	264	5	6	

Secretary.

No. 366.

PUBLIC DEPARTMENT.

Extract from the Minutes of Consultation, dated 20th April 1854.

Read the following letter from the Secretary to the Madras University.

(Here enter 13th April 1854.)

Para. 1. The Right Honorable the Governor in Council has perused with interest the Thirteenth Annual Report of the Governors of the Madras University, detailing the state and progress of the Institution under their charge and their proceedings generally during the past year, and sanctions its being printed and read at the ensuing Anniversary.

2. The principal features of the past year's management as exhibited in the present and last Reports are the reduction of the School fee charged in the High School from four to two Rupees, the enlargement of the Institution by the addition of a Collegiate Department and of a Primary School, and the establishment of two Provincial Schools at Cuddalore and Rajahmundry.

Page 3.

3. The number of scholars which at the date of the last Report stood at 448, amounts at present to 528, and this result is doubtless owing

in some measure to the reduction of the School fee above referred to.

Pages 8 and 9.

4. The Government notice with satisfaction the favourable result of the annual examination held in December last, in which two of the scholars of the senior class, viz. T. Mootoosawmy and V. Rajahgopaul have attained the highest grade of Proficiency, and two others, P. Chinnatumby and A. Vurda Charry have secured degrees of the second class. While all four are stated to have accomplished a course of studies more complete than that gone through by the Senior students of any former year, the attainments of Mootoosawmy are noticed in particular.

Page 7.

5. The Government are also gratified to learn that four of the scholars from the Collegiate classes have obtained employment as Apprentices under the Railway Company on the result of an examination open to public competition, and that another has entered the Medical College.

Page 12.

6. The Governor in Council willingly accedes to the recommendation of the Board that the Norton Gold Medal, which is stated to have been so honorably founded by the past Proficients of the University, should be annually struck at the Government Mint free of charge.

Pages 25 and 26.

7. The Government concur in the views of the University Board as to the practical utility of the studies recommended by the Local Committee at Cuddalore to be introduced in the Provincial School at that station, and approve of their proceeding in that respect.

Page 34.

8. In addition to the two Government Mofussil Schools already in existence, it is

observed that the Board have it in contemplation to found at an early date, two similar ones in Combaconum and Calicut—and the Governor in Council notices with great pleasure that the liberality of His Highness the Rajah of Tanjore has placed at their disposal suitable school buildings at the former station. It is hoped that the next Report of the Governors will intimate that a school is in actual operation at that populous and important place as well as in Calicut, and that their operations will be extended, as soon as the means at their command will admit, to the other stations of Bellary and Chittoor.

Pages 35, 36 and 37.

Pages 39, 40 and 41.

9. The result of the Public Examination held in February last in pursuance of the Educational Notice published in the Government Official Gazette of the 25th November last is most satisfactory, though the number of the Candidates who competed for the prizes offered was small, and the Governor in Council has much pleasure in awarding to the successful competitors noted in the margin the rewards to which they have severally established their claims, agreeably to the recommendation of the Examiners and the Board.

T. Mootoosawmy, Rupees 500
V. Rajahgopaul, ,, 300
A. Narrain Row, ,, 200

10. The Government rejoice at the improved aspect of the cause of Native Education in this Presidency as exhibited in the Report before them, and trust that the system which has been so well commenced with the valuable aid of the University Board will be perfected and extended under their auspices and produce the anticipated results.

Page 44.
From Secretary Madras University 17th January 1854.
Extract Minutes of Consultation 24th do. do.

11. In noticing Mr. Key's retirement in January last from the office of a Member of the Board, the Governor in Council warmly participated in the regret expressed by them at the loss of that Gentleman's services in connection with the Institution, and it only re-

mains for him now to express his approbation of the proceedings of the Governors, to whom the thanks of Government are due for their valuable and disinterested labors during the past year.

(True Extract.)

(Signed) H. C. MONTGOMERY,
Chief Secretary.

To

The Governors of the
Madras University.